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PERSONALITY CHANGES FOLLOWING SUBSTITUTION THERAPY IN PRE-ADOLESCENT EUNUCHOIDISM

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The dramatic physical changes resulting from the administration of testosterone and its derivatives to males with hypogonadism have been the subject of many reports since the introduction of this specific therapeutic agent.[1] The anatomic and physiologic changes have received special attention, but the descriptions of the physiologic changes have with few exceptions been meager; in general, these factors have been overlooked.[2] It is our purpose in this communication to present in greater detail the changes of personality that occurred following specific treatment in 7 cases of eunuchoidism.

The cases under observation represent moderate to severe types of hypogonadism that have been treated by the subcutaneous implantation of pellets of testosterone or its derivatives. In 3 cases previous therapy in the form of injections of testosterone propionate in oil had been given. Two types of pellets were used. Small pellets of methyl testosterone were prepared by compressing the crystalline material[3] in a mold.[4] Approximately 15 pellets representing 150 mg. were implanted every ten weeks. Four large pellets, each weighing approximately 200 mg. and generally composed of testosterone propionate, were implanted once a year. The effectiveness of therapy was determined by the physical changes, particularly the enlargement of the penis and prostate, the appearance of pubic and axillary hair, the deepening of the voice and enlargement of the neck and the alteration in body contour with the development of the muscles of the shoulders, arms and thorax. Associated with these changes were a development and increase in libido expressed by masturbation, an interest in women and, whenever possible, by intercourse. The concomitant feeling of well-being and of optimism and the change of attitude to the environment which are expressions of personality modifications that resulted from treatment will be described in greater detail.

The patients themselves have been very helpful in describing minutely the changes in personality following treatment. All had had much ineffective nonspecific treatment of various types before they came to us. They had learned to be quite skeptical and expected very little from any treatment. Thus the element of suggestion is fairly well eliminated. All the patients had become quite introspective since adolescence when at the age of 14 or 15 they discovered that they were different from other boys, and then in time they became convinced that there was very little possibility of any improvement in their condition. The patients were very reticent concerning their pretreatment existence until they saw that the rapid physical response to therapy was of a permanent nature, at which time they gave data previously withheld.

One must visualize the reaction of a young boy when he realizes that he has undescended testicles or that his testicles are atrophic. These boys in their early childhood were active, healthy, husky children able to compete with or even excel other boys; at adolescence they suddenly discover that they are different from other boys, who make fun of them. Whereas previously their rate of growth was on a par with the normal boys, at adolescence our patients ceased to develop sexually and to mature. The normal boys begin to excel them in sports and social activities and are gradually transformed into young men. Our patients remain adolescent, take on an abnormal body contour, retain a high pitched voice and show no growth of genitals. They doubt then that they are real men. This leads invariably to a great deal of resentment mixed with the feeling of rage and frustration, which is usually repressed, and the only thing evident on the surface is a feeling of bitterness and hostility to the world at large. The most important change effected by successful treatment is a better relationship to the world. All these patients describe in one way or another that they become warm, more affectionate, less hostile, less jealous and not so bitter and that they do not shrink from people any more. They meet men and women on an equal basis, and they are not afraid to compete. Together with this there comes a feeling of growth and security, and the patients state that they "are less jumpy, more firm, more definite, not so irritable." All this will be elaborated in greater detail in the review of the cases.

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2. Carmichael, H. T., and Kenyon, H. T.: Eunuchoidism: A Psychiatric and Endocrine Study of Six Cases, Arch. Neurol. & Psychiat. **40**: 717 (Oct.) 1938. Rennie, T. A. C.; Vest, S. A., and Howard, J. E.: Use of Testosterone Propionate in Impotence: Clinical Studies with Male Sex Hormones, South. M. J. **32**: 1005 (Oct.) 1939. Carmichael, H. T.: A Psychoanalytic Study of a Case of Eunuchoidism, Psychoanalyt. Quart. **10**: 243 (April) 1941.

3. The Ciba Pharmaceutical Company, Inc., Summit, N. J., supplied the powdered crystalline methyl testosterone and the testosterone propionate pellets.

4. Biskind, G. R.; Escamilla, R. F., and Lisser, H.: Implantation of Testosterone Compounds in Cases of Male Eunuchoidism, J. Clin. Endocrinol. **1**: 38 (Jan.) 1941.

These patients spend a great amount of energy in solution of the neurotic conflict created by the hypogonadism. Even though the conflict has factual rather than fanciful causes, the influence on the psychic life is the same. An emotional conflict in which the patient is not sure of his sex (and this occurs in many other conditions, including neuroses and schizophrenia) gives rise to a tremendous amount of speculation, indecision and a feeling of hopelessness. As with any other patient whose neurosis is resolved by psychotherapy or analysis, there is a newly gained feeling of freedom after successful treatment. There is a feeling that one can carry out one's own decisions without constant inner struggle and a feeling that one has become a different person. The energy which was previously spent in the solution of the neurotic conflict is now released, and the patient is able to do a good day's work without constant anxiety. This is indicated by the fact that all our patients said that their work takes them much less time and that in the same space of time they do more and better work. This, combined with a certain amount of self assurance and even aggressiveness, results in their giving up inferior positions and looking for, and finding, more remunerative employment. Several patients were able to go off relief and obtain independent positions. Other patients were advanced from subordinate to executive positions. All this is described by the patients themselves as "becoming more ambitious." There is less strain, less fatigue, more firmness, less suspiciousness and a growing feeling of security. Together with such changes there comes a feeling of "belonging," of being in unison with the world and a general feeling of well-being. The changes brought about by the treatment are described by the patients in various ways, depending on the educational and intellectual background.

REPORT OF CASES

CASE 1.—A. B., aged 29, a tall, lanky, asthenic looking man, appeared very lethargic, dull and apathetic. He had been a poor scholar and had to repeat the sixth and seventh grades. He was brought up in a broken home, was placed in an orphanage and ran away from school several times. He was involved in minor delinquencies and finally was committed to a school for delinquent boys at the age of 17. However, his behavior was very good after he left the institution. He was able to work as a janitor without returning to a life of crime. The patient stated that he noticed as a boy that his genitals were small, but he always hoped that they would grow. At the age of 15 he became aware that something was radically wrong with him, and that worried him a great deal. The patient began to masturbate at the age of 12. This habit has continued until the present time. His criminal activities coincided with the height of his anxiety about his sex organs. The only way he could prove his masculinity to the other boys was by stealing, hoping that this would be used as evidence of sexual potency. There was no history of homosexual relations. The patient was attracted to girls but never dared to approach them on account of the small size of his genitals. The impression he gave was that of a lethargic, withdrawn, introverted boy with a strong sense of inferiority, to which he reacted at first by criminal behavior and afterward by complete resignation and withdrawal.

Before treatment the following measurements were recorded: His height was 183.7 cm., span 192.5 cm., lower measurement 100 cm. His weight was 66.8 Kg. The penis was 3.5 cm. long and 5.5 cm. in circumference; the right testicle was 2 cm. in diameter and the left testicle was absent; the scrotum was small. The body hair was scant, with a feminine distribution, and no beard could be distinguished. The voice was high pitched. The bone age was between 16 and 18 years.

November 4, 1940 a subcutaneous implantation of 4 pellets of testosterone propionate totaling 800 Gm. was made.

One year after treatment the pellets were still palpable and effective. The penis measured 6.5 cm. in length and 7 cm. in circumference. The measurements of the body and the bone age did not change. The voice deepened. Body hair retained a female distribution but became more abundant. The facial hair required shaving every two weeks. The right testicle measured 3 cm. in diameter, but the enlargement was mainly in the epididymis.

When the patient returned a year later for examination we were surprised to see a tall, husky, rawboned, rangy looking man, self assured and confident. The first thing he did was to remark that he had quit his job and that he was looking for another position. He was better in every way. He liked more people. He was not so tired and felt much stronger. The patient stated that the work of a janitor was not interesting and he was now going to work in the shipyards as a welder. The following changes in his personality were evident: He felt and acted more alert, ambitious and imaginative; he had initiative and was more aggressive and even rebellious. The patient stated that he was more outspoken, but he himself is easier to get along with because he has become more firm and honest and does not try to court every one's favor; he is not as cranky and irritable as he used to be. In reference to his sex life the patient stated that he had frequent erections and was going with a girl.

CASE 2.—C. D., aged 20, was tall and thin, had a very broad chest and large buttocks, had no facial hair, spoke in a high pitched whisper and was shy and retarded. He stated that he came to California only four years before from a farm in the Middle West. He did all kinds of work and was on a National Youth Administration job in the city. For the past six weeks he had been working as an attendant in a hospital. The patient stated that he had known nothing about sex until he was 15. He hoped that his penis would grow, but it didn't. At the same time he noticed that instead of a chest he had a bosom and that his hips were becoming very large. He tried intercourse several times but had difficulty getting an erection and had premature ejaculations. Being aware of the small size of his penis he was very shy and kept away from girls. He also avoided boys. He was depressed, very quiet and discouraged.

Before treatment the following measurements were recorded: His height was 178.2 cm., span 175.6 cm., lower measurement 94.8 cm. His weight was 87.3 Kg. The penis was 4 cm. long and 8 cm. in circumference. Each testicle was 3 cm. in diameter and held close to the pubic bone. The scrotum was small. The body hair was scant, but the pubic hair extended slightly to the umbilicus. The voice was moderately high pitched. There was no beard.

Subcutaneous implantation of 2 pellets of testosterone propionate totaling 400 mg. was made. One pellet sloughed out three months later.

Examination ten months later showed no change in the size of the testicles. The penis was 5.6 cm. long. The voice had deepened slightly; the facial hair was fuzzy and required shaving once or twice a month. An acneform eruption was present on the face. There had been a gain in weight to 100 Kg.

When the patient came six months later he stated that he felt much better, and one could notice a decided difference in his appearance. There were greater poise, self assurance and optimism. The patient stated that he had been working all this time in a hospital but now he was leaving it to work in an airport. He had broadened out physically and had gained weight. He was going out with girls. He was quite active sexually, had good erections and was able to have satisfactory intercourse. It bothered him, however, that his penis shrank after intercourse. The patient planned to get married as soon as his job at the airport materialized. He was quite inarticulate but tried to convey the impression that "he was more sociable, not so bashful and more self confident."

CASE 3.—E. F., aged 33, was an undertaker and presented a sober, funereal appearance. At the age of 8 years a bilateral orchiopexy had been done, but the testicles failed to grow. For many years various types of glandular therapy had been tried without success, and the typical habitus of preadolescent eunuchoidism developed. After three years of high school

education he worked at odd jobs. For the past thirteen years he had been an undertaker. He had had occasional erections but no seminal discharge. He went with his wife for six years before he married her. They were both very much in love with each other and finally the patient explained his condition to her and stated that he was not able to have intercourse. The girl understood and consented to marry him. They had been married for six months and the wife was still a virgin. Their sexual life consisted largely in mutual masturbation. The patient stated that up to the age of 18 or 20 he was frequently approached by homosexuals. He reacted violently to such attempts, as he had been warned by a physician that such approaches would be made to him.

Before treatment the following measurements were recorded: height 170.6 cm., span 170 cm., lower measurement 90 cm. and weight 63.6 Kg. The penis was 2.5 cm. long and 5 cm. in circumference. The scrotum was very small and appeared bifid with a small mass in each side. The body hair was extremely scant, with a feminine distribution, and facial hair was almost invisible. Bone age studies showed complete fusion of all epiphyses. The basal metabolic rate was minus 26 per cent. The voice was high pitched.

Treatment consisted of the following implantations:

Dec. 23, 1940, 18 pellets of methyl testosterone, total 169.5 mg.

Feb. 26, 1941, 4 pellets of testosterone propionate, total 800 mg.

March 30, 1942, 2 pellets of testosterone propionate, total 400 mg.

Fifteen months after the first implantation the penis measured 5.5 cm. in length and 7.5 cm. in diameter. The voice became deep. There was moderate proliferation of body hair and a scant fuzz appeared on the face. His height and weight remained stationary but his shoulders became heavier and his hips thinner.

When the patient came in April 24, 1942 there was a decided change in his appearance. He was alert, eager, snappy and peppy, his eyes were shining and he was grinning from ear to ear. His funereal appearance was gone and he was wearing bright sport clothes. The patient stated that he felt "swell"; his work was going along very satisfactorily and he was getting a promotion. He stressed the fact that he had changed physically a great deal. Ten days after the implantation he began to have emissions of seminal fluid. He had definitely penetrated his wife and both he and she enjoy intercourse. She now has definite orgasms. His wife is more cheerful and the treatment has brought them together. The patient stated that he is a different person, small things do not bother him, he is not so jumpy, he is less irritable, he thinks differently, he is more secure and he is able to make definite plans and carry them out. The patient discussed his plans of enlarging his business which seemed to be quite realistic and which he has been able to follow through since the interview.

CASE 4.—G. H., aged 40, an alert, eager, active business man, was extremely ingratiating and almost too eager to cooperate. He stated that he had had undescended testicles and that at the age of 13 an orchiopexy was unsuccessful; no testicular tissue was demonstrable. Six years later he had an unsuccessful transplantation of testicles from a convict. He was always aware of the small size of his penis and the atrophic testicles, and he reacted to it by being very active, aggressive and positive. He worked in all sorts of occupations, including that of ship fitter and sailor, and was very active in various sports. He was very intelligent and graduated from high school in three and one-half years. He graduated from a business school of one of the local universities and immediately after this was given a position, first as a salesman, then rapidly promoted to a responsible executive position. At the age of 30 he began to go out with a girl and married her when he was 33. Before he was married he had explained to his future wife his difficulty, but she loved him so much that it did not matter. They had occasional intercourse with no seminal discharge.

Before treatment the following measurements were recorded: height 181 cm., span 186 cm., lower measurement 106 cm., and weight 94.7 Kg. The hair on the face was scant and downy; body hair was almost absent and the sparse pubic hair had a feminine distribution. The voice was high pitched. The skin of the face was soft and finely wrinkled. The penis was 4 cm. long and 6 cm. in circumference. In the erect state it was 7 cm. long. The scrotum was very shrunken and appeared bifid, and no tissue was palpable in it. On rectal examination the prostate and seminal vesicles were not palpable. The basal metabolic rate was determined twice and was minus 23 per cent and minus 19 per cent.

Five separate implants of methyl testosterone pellets were given between March 1940 and May 1941, making a total of 740.5 mg. An average of 17 pellets were implanted each time. Four large pellets of testosterone propionate totaling 800 mg. were given in May 1941. They were effective until June 1942, when 3 additional pellets were implanted.

After two years of treatment the penis measured 7 cm. in length and 7.2 cm. in diameter. The prostate was palpable. The pubic hair became heavier but remained feminine in distribution. The sallow, fawn color of the skin of the face disappeared and the characteristic facial periorbital wrinkles became much less evident. The hips became smaller and the shoulders enlarged. The voice was deep and well modulated.

When the patient came in following treatment he described the changes as follows: His drive for success has been more intense and he has had more financial success than ever before in his business. He has less fatigue and more energy. He has much more sex drive. He was very proud of the fact that hair had begun to grow all over his body and that he had emissions of seminal fluid. Intercourse was complete and pleasurable. The patient stated that he was more affectionate, that he did not try to please people as much as he had before and that he liked people more. He was less jittery and not so insecure; as he expressed in a jubilant exclamation, "I am part of the world, I am normal."

CASE 5.—I. J., aged 27, was tall, asthenic, pale and beardless and looked like a boy of 18. The patient stated that he had come from a large family, had gone to high school and had studied for two years in a midwestern university. At the age of 20 he came to San Francisco and began to work in a drugstore. He had had mumps in childhood but did not remember whether that illness had been complicated by orchitis. He had had occasional erections but there had been no emissions. He was treated with testosterone propionate for eunuchoidism by a physician until referred for implantation therapy. The patient stated that the treatment produced the following changes: He had had a high pitched voice which now was normal. His attitude in conversation was more free. He showed a greater sense of humor. He was more aggressive and recently he was promoted to the job of an executive. Before treatment he could not take charge of people. His orders were not carried out. He was afraid to give orders for fear people would laugh at his high pitched voice. Now his voice was more resonant. He could assume a definite tone of authority and he talked more slowly and was more deliberate. His associates took orders from him because he was more consistent and less arbitrary. Before this he was always in difficulties and disputes with the other employees, and for these reasons he was not promoted. He could meet girls now and they did not frighten him. Recently he was in a girl's home and was told by the family that whereas a year ago he would read a book when he came to see the girl at present he was really interested in her and wanted to be with her alone. He had regular erections and occasional emissions. Prior to the change in his voice he had to be very careful in choosing his friends for fear they would try to make homosexual approaches to him; now he was not afraid of that. Since he had been under treatment he felt confident that he could become a real man.

Before treatment the patient was tall, thin, long legged and beardless and had a high pitched voice. The complexion was sallow. Pubic hair was slight in amount and axillary hair was negligible. The penis was small, the left testicle was extremely atrophied and the right testicle was much smaller than normal. The prostate and seminal vesicles were not palpable. His weight was 56.8 Kg., the height was 179 cm., the lower measurement 96 cm. and the span 182 cm. He received a total of fifty-nine injections of 25 mg. of testosterone propionate in oil, three injections a week up to March 1940.

Implants of methyl testosterone pellets were started in April 1940; a total of 511 mg., distributed in four implantations, was given until December 1940.

The large pellets of testosterone propionate were implanted in December 1940, but the original 4 sloughed out and 3 additional pellets were implanted in March 1941. These also were extruded from the wound and an additional 4 large pellets totaling 800 mg. were implanted in July 1941. These proved entirely satisfactory and effective through May 1942.

A recent examination showed that there had been no change in major body measurements but an increase in weight had occurred. The penis more than doubled in size and measured 9 cm. in length and 8.5 cm. in circumference. His voice was deep. His neck and shoulders had increased in size. The pubic hair was heavier and was growing toward the umbilicus.

CASE 6.—K. L., aged 19, a tall blond boy, spoke intelligently and freely. He stated that he had one undeveloped descended testicle and one undescended testicle. Two attempts at orchiopexy had failed to place the undescended testicle in the scrotum. He was brought for treatment by his father, who stated that the patient had failed to mature in that his play activities were with children five and six years his junior; his mannerisms were of the fussy feminine type, and his beard and genitals were not developed. The patient had no sexual desire; he had had occasional erections but no seminal emissions. He was very bashful and afraid of girls. He was always somewhat nervous, jittery and restless. When he was small, things used to "bother" him at home; apparently there was a great deal of discord in the family. Since adolescence he had been in a constant state of anxiety. The boys used to tease him and talked about the fact that he had no testicles and laughed at him because he had a small penis. Before implantation therapy was started he had had sixteen injections of testosterone propionate, 10 mg. in oil, given by the referring physician.

The patient was immature and boyish, appearing younger than the stated age. His height was 168 cm., the span 171 cm. and the lower measurement 87.5 cm. His weight was 68 Kg. The voice was high pitched and the body hair scant. The penis was 6 cm. long. The scrotum was small, shriveled and limited to the right side and contained a pea sized bit of tissue. The prostate was barely palpable. His bone age was placed at 13 years. The basal metabolic rate was minus 16 per cent.

Implants of methyl testosterone pellets were started in November 1939, and up to December 1940 he had had five implantations averaging 18 pellets each. The total amount of methyl testosterone used was 643.8 mg.

Four large pellets, each 200 mg., were implanted in December 1940, but several sloughed out so that an additional 4 similar pellets were implanted in Septen.ber 1941. These have been effective for almost one year.

The physical changes resulting from treatment were an increase in body and facial hair, a deepening of the voice and development of an acneform eruption on the face and shoulders. The penis measured 10 cm. in length and 9.5 cm. in diameter. The scrotum enlarged. He grew 7 cm. in height.

Following treatment the patient noticed that there had been a decided change in his libido. He started to go out with girls. He developed sexual desire, which he has desired to control until marriage. He began to go to dances and enjoyed going with girls. He was more eager now to succeed. He was not satisfied with his job in a gas company and intends to go into the army. He had occasional nocturnal emissions and frequently dreamed of girls; occasionally he had to resort to masturbation. His anxiety was greatly diminished. He was more calm and more definite and self assured.

CASE 7.—M. N., aged 21, a student in one of the local universities, was referred to the clinic for implantation therapy for typical preadolescent eunuchoidism. The patient was a tall, good looking, attractive, blond boy with a pleasant engaging smile; he was very intelligent and obviously well brought up. As a little boy he could "lick" other boys in school, but after the age of 12 he began to lose out, and instead of being the leader in his class the other boys began to pass him up. They became huskier and taller and better athletes than he was, whereas previously the patient was much stronger than they were. The family did not worry about it, since both his father and mother were quite late in maturing. Prior to the specific androgenic treatment the patient had had no erections and no emissions. The patient stated that on several occasions he had been approached by homosexuals but repulsed their advances. He knew about homosexuality from other boys in his fraternity.

Physical examination in September 1941 revealed the following measurements: height 178 cm., span 178 cm., lower measurement 92.5 cm. and weight 62 Kg. The penis was 10 cm. long and 9.7 cm. in circumference. The scrotum was fairly loose and wrinkled and contained a mass 2 cm. in diameter on the right side; nothing was palpable on the left side. The pubic hair was fairly abundant but of feminine distribution. Axillary hair was scant and facial and body hair was absent. The bone age was less than 14 years. The basal metabolic rate was plus 10 per cent.

In the year before the examination described he had received two or three injections a week of testosterone propionate, 23 mg. in oil, for approximately eight months, terminating four months before the examination.

Three large pellets of testosterone propionate were implanted subcutaneously in September 1941.

Examination in February 1942 showed no essential change in the foregoing measurements. The voice was slightly deeper and better modulated. The erections and nocturnal emissions occurred as frequently as they had during the testosterone propionate injections.

The patient stated that following the specific therapy he was much better and quite different. He developed an interest in girls, his libido increased and he has masturbated occasionally. He left the university and obtained a position in one of the shipyards. He was more mature and stable, had greater interest in his work and was planning to enter naval aviation. He was going steadily with a girl whom he planned to marry within a short time. The patient stated that he was more mature and better balanced, was able to save money and was less of a kid.

COMMENT

In reviewing these cases, one finds that there are two ways in which these patients reacted to their sexual inferiority: The more simple, less complex persons with limited background and intelligence reacted to their eunuchoidism by submissiveness and withdrawal. They became masochistic, detached themselves from people, shying from the company of women as well as avoiding association with men. In some instances there was a defensive attempt at pronounced aggressivity, with efforts to prove to the other boys that they were regular fellows. They became leaders in their neighborhood gangs; one followed a criminal career. These attempts at compensation were usually quite sporadic and lasted only a short time. They carried on more or less routine jobs with inferior salaries, not daring to ask for a raise in pay. They did not go out with girls for fear that their inferiority would be discovered.

The second group, with more intelligence and better backgrounds, reacted to their feeling of inferiority resulting from the hypogonadism by overcompensation. Thus our executive (case 4) from the very beginning became a very active, extroverted person, a leader in activities and sports. Nonetheless he was in constant dread that his condition might be discovered. At the same time there were definite evidences of psychosexual maturity with capacity to care for another person of the opposite sex. Thus two of our patients had married not for the sake of appearances but of genuine love for their wives. This latter point is important to bear in mind in connection with the question of homosexuality, which will be discussed later.

In general then the reactions of these patients were either of extreme submissiveness or of aggressivity and arrogance. Frequently these were intermingled

with feelings of jealousy and hostility. These patients were constantly on guard, vigilant and never at ease.

Following successful treatment there was a decided change in the aforementioned attitude with a feeling of poise and security. The patients were no longer on guard lest some one take advantage of them, lest they be made completely feminine. In regard to the married patients, as the treatment gave them the capacity to carry out normal sexual relations there was a noticeable increase in the sense of security and feeling of fulfilment, felt both by the patients and by their wives.

It is significant that in spite of the hypogonadism and attendant feminine build of these patients none of them became homosexual. As stated in the histories, homosexual approaches and attempts at seduction were made, but the patients reacted with repugnance and disgust, and none of them recalled having had any sexual experience with men after adolescence—none beyond the usual experimental sex play in childhood when our patients were normal, husky children. As previously mentioned, 2 of the 7 patients married and 1 had definite plans of marrying, and though the element of keeping up appearances was dominant they appeared to be genuinely in love.

Thus, in this group of patients at least, there was no evidence that hypogonadism was in any way associated with homosexuality. Comparing this group with a similar group of 15 homosexuals who came to us in connection with the selective service, we have come to the following conclusions: All the homosexual boys had large, well developed sexual organs with well developed testicles. Nearly all of these homosexual men had strong sex drives, as evidenced by frequent erections, nocturnal emissions and fantasies—all, however, misdirected to their own sex. None of them had any desire for women, but all of them had very strong sexual drives with libido directed to other men either passively or actively. Comparing these two groups, one cannot avoid a conclusion that there must be psychologic rather than physiologic factors which tend to direct men into homosexuality.

SUMMARY AND CONCLUSIONS

1. Psychologic changes took place in 7 patients with preadolescent eunuchoidism treated by implantations of testosterone derivatives.

2. Anatomic and physiologic changes that resulted from specific androgenic therapy did not differ from those described in the literature.

3. The eunuchoid patients had reacted to their defect either by strong passivity and submission, with sporadic attempts at overcompensation as expressed in delinquent behavior, or else by overcompensation in becoming very aggressive, domineering and overactive.

4. The psychologic changes following successful therapy consisted in gaining a feeling of security, greater emotional stability and a feeling of belonging, with the disappearance of a constant state of vigilance, suspiciousness, pettiness, fussiness, jitteriness and a more or less constant state of anxiety. The improvement can be compared to a successful therapeutic result in a typical neurotic state.

5. In our series eunuchoidism did not preclude a normal feeling of affection and love for members of the opposite sex.

6. A comparison with a control group of 15 homosexual men indicates that psychologic rather than physiologic factors are responsible for the development of homosexuality.

Corner Post and Scott streets.

TREATMENT OF EDEMA OF RENAL ORIGIN

REPORT OF TWELVE CASES

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The patient who suffers from nephrosis or from the nephrotic state of chronic glomerulonephritis has as his predominant symptom edema, which is characteristic of this clinical entity. Not only is it the main symptom, but it is the outstanding feature of his illness, which keeps him an invalid and prevents his maintaining a normal or nearly normal economic and social existence. When the nephrotic features of glomerulonephritis predominate, hypertension, with its accompanying symptoms due to vascular changes in brain, heart and kidneys, is rarely present. Renal function is usually good and there usually is no retention of nitrogenous matter in the blood. There is little or no anemia. In other words, except for the generalized edema and the symptoms secondary to it the patient usually feels well, and if the edema was absent he could live a fairly unrestricted life. To attain such an end and to rehabilitate patients who have been so incapacitated we are presenting an outline of therapy which has proved satisfactory.

Without going into detail, the edema of nephrosis is the result of retention of water and the accumulation of an excess of sodium chloride in the tissues. These changes are brought about by loss of protein in the urine or lack of protein in the patient's diet or, occasionally, both. This results in a decrease in the concentration of serum protein, a subsequent decrease in colloidal osmotic pressure of the serum and a tendency to edema formation and the retention of salt in the tissues of the body.

The following significant laboratory findings are present: albuminuria, a decrease in the concentration of plasma protein and an increase in the amount of sodium chloride in the plasma and tissues. The colloidal osmotic pressure of the plasma (normal, 21.4 mm. of mercury or 360 mm. of water) is decreased. Anemia, definite hematuria and pronounced retention of nitrogenous waste products usually are absent. Hypercholesteremia is present and the basal metabolic rate usually is low. Vascular changes are rare and occur only in cases in which there is extensive glomerular involvement. There is a decrease in plasma volume.[1]

Since the renal lesion cannot be attacked directly, some means of eliminating the sodium chloride and water from the body through the urinary tract must be employed. The serum protein must be augmented. The intake of water and salt must be restricted. Although modified for each case, an outline of treatment based on the clinicochemical factors just mentioned has been found to be most efficacious. It consists of dietetic and diuretic measures which restore the physicoelectrolytic balance in the body.

From the Division of Medicine, Mayo Clinic.

1. Harris, A. W., and Gibson, J. G.: Clinical Studies of the Blood Volume: VII. Changes in Blood Volume in Bright's Disease With or Without Edema, Renal Insufficiency or Congestive Heart Failure, and in Hypertension, J. Clin. Investigation **18**: 527-536 (Sept.) 1939.

DIET

The patient is instructed to use a diet containing 100 to 125 Gm. of protein daily. It is salt free except for the natural salt contained in the food and contains between 1,000 and 1,500 cc. of fluid. If his edema free weight is normal, the diet furnishes approximately 2,000 calories. It may be supplemented by any reliable vitamin concentrate. An adequate, healthful diet is as essential in the treatment of this disease as in that of any chronic illness.

DIURETICS

The diuretic agents can be divided into two groups: (1) those which have a direct action on the kidneys, as diuretic agents. The manner of their use will be described in detail in the ensuing reports of cases. Their advantage is in their low toxicity, desired diuretic action and ease of administration. Mercurial diuretics, although usually efficacious, are generally not needed when the diuretic program is established.

The use of acacia in the treatment of nephrotic edema is still considered by some to be a rather heroic measure, to be employed only under strenuous circumstances. Goudsmit and Binger [4] recently reported that it was a reliable and reasonably safe procedure.

The clinical and laboratory observations pertinent to 10 of the patients so treated maintain a certain uniform-

TABLE 1.—*Significant Laboratory Findings in Twelve Cases of Edema of Renal Origin*

	Urine					Blood					
Case	Albuminuria, Grade	Erythrocyturia, Grade	Leukocyturia, Grade	Cylindruria, Grade	Urea Clearance, Cc. per Minute	Urea, Mg. per 100 Cc.	Plasma Cholesterol, Mg. per 100 Cc.	Serum Protein, Gm. per 100 Cc.	Hemoglobin, Gm. per 100 Cc.	Albumin-Globulin Ratio	Basal Metabolic Rate, per Cent
1	4	2	2	2	28.8	18	....	5.4	10	4.2:1	....
2	3	2	1	..	26.5	38	33.3	5.1	8.8	1.01:1	....
3	4	..	1	1	72.1	28	248	5.7	15.3	.....	−12
4	2	..	1	2	44.4	14	707	4.0	14.0	1:1.3	− 1
5	4	..	..	..	72.0	39	505	2.9	11.2	1:1.5	....
6	4	..	..	..	65.0	10	555	4.0	10.5	1.1:1	−11
7	4	..	..	1	53.2	48	757	3.9	15.0	1:1	....
8	3	..	..	..	77.6	12	....	4.5	12.7	1.4:1	....
9	4	*	†	..	26.4	12	416	3.7	11.9	1:1	− 4
10	4	..	..	1	45.3	36	737	4.7	11.9	....	....
11	4	..	1	1	55.1	14	555	5.0	13.6	3.5:1	+10
12	4	..	1	1	15.6	62	1,190	3.6	12.7	1:1.2	−37

* An occasional erythrocyte. † An occasional leukocyte.

TABLE 2.—*Significant Clinical Findings in Ten Cases of Edema of Renal Origin*

Case	Age, Years	Sex	Duration of Nephrosis	Degree of Edema	Days in Hospital	Injections of Acacia, Number	Loss in Weight, Pounds	Relief of Edema	Subsequent Course
1	57	♀	4 months	3	11	4	19	Complete	Excellent
2	34	♀	3 years	0	5	3	0*	Complete	Excellent *
3	19	♀	3 months	3	6	4	13	Complete	Excellent
4	32	♂	10 months	4	8	4	20	Complete	Fair †
5	29	♀	7 months	2	10	3	10	Complete	Excellent
6	49	♂	3 years	3	7	4	22	Complete	Fair †
7	28	♀	8 years	0	5	3	0*	0*	Excellent *
8	20	♀	5 months	4	15	8	24½	Complete	Fair †
9	35	♂	5 months	2	10	6	8¼	Complete	Excellent
10	25	♀	3 months	1	7	3	7	Complete	Excellent

* "Prophylactic" treatment with acacia. † Required second series of treatment with acacia.

TABLE 3.—*Significant Laboratory Findings at Various Intervals in Case 12*

Date	Weight, Pounds	Albuminuria, Grade	Blood Urea, Mg. per 100 Cc.	Serum Protein, Gm. per 100 Cc.	Albumin-Globulin Ratio	Plasma Chloride, Mg. per 100 Cc.	Plasma Cholesterol, Mg. per 100 Cc.	Hemoglobin, Gm. per 100 Cc. of Blood
On admission to hospital (1/19/40).....	200	4	62	3.6	1:1.2	594	1,190	12.7
On dismissal (3/23/40).....	146	4	80	2.6	1.4:1	541	.....	....
On return for check-up (9/22/41).....	131	4	56	6.2	.....	600	282	13.8

such as mercurial preparations, potassium and ammonium salts, caffeine derivatives, concentrated solutions of dextrose and (2) those which act by affecting the colloidal osmotic pressure of the blood, such as whole blood or plasma, which should be administered by transfusion, and acacia, which should be administered intravenously. The latter produce diuresis by increasing plasma volume and by promoting a saline diuresis as well as by raising the colloidal osmotic pressure.[2] In previous communications Keith and Binger [3] described the advantages of potassium salts (potassium nitrate) ity and are therefore recorded in tables 1 and 2. In all cases the diet yielded 2,000 calories a day and contained from 100 to 125 Gm. of protein and from 800 to 1,200 cc. of fluid. No salt was added to the food in preparation. Each patient received 9 Gm. of potassium nitrate daily and was given iron and vitamin concentrates as needed.

Vascular changes appeared only in case 7, as evidenced by the blood pressure, which varied over twenty-four hours between 180 and 132 mm. systolic and 120 and 70 mm. diastolic, together with minimal narrowing of the retinal arterioles.

2. Kerkhof, A. C.: Plasma Colloid Osmotic Pressure as a Factor in Edema Formation and Edema Absorption, Ann. Int. Med. **11:** 867-880 (Dec.) 1937. Lepore, M. J.: Acacia Therapy in Nephrotic Edema, Ann. Int. Med. **11:** 285-296 (Aug.) 1937.

3. Keith, N. M., and Binger, M. W.: Diuretic Action of Potassium Salts, J. A. M. A. **105:** 1584-1590 (Nov. 16) 1935.

4. Goudsmit, Arnoldus, Jr., and Binger, M. W.: Treatment of Nephrotic Edema, J. A. M. A. **114:** 2515-2517 (June 29) 1940; Acacia in the Treatment of the Nephrotic Syndrome, Arch. Int. Med. **66:** 1252-1281 (Dec.) 1940.

Each patient received a minimum of three intravenous injections of 500 cc. of a 6 per cent solution of pure acacia in a 0.06 per cent solution of sodium chloride at intervals of from one to two days. In some cases more acacia was required to obtain the desired effect. The concentration of acacia in the serum was determined one day after the last injection. If the concentration of acacia was 2 Gm. or more per hundred cubic centimenters of serum, further treatment with acacia was not employed. Otherwise the administration of acacia was continued not only until the patient was free from edema but until the concentration of acacia in the serum reached a satisfactory level. A few patients suffered slight reactions, consisting of mild headache, backache or feeling of constriction in the thorax. All were relieved by slowing the rate of flow of acacia into the vein or by administration of small doses of ephedrine or epinephrine.

Careful examination was carried out in all cases for active foci of infection. Several patients had infected teeth extracted or underwent tonsillectomy during their hospitalization. While this report is not directly concerned with the bacteriologic aspect of nephritis, it is known that streptococcic infections can be serious etiologic factors in acute glomerulonephritis and can precipitate acute exacerbations of chronic glomerulonephritis. Focal infection should be eradicated in these cases.

When ready for dismissal from the hospital, each patient was instructed about a proper diet and was advised to follow this diet and to take potassium nitrate until advised otherwise by the physician in his home locality. The diets of those whose nutritional state was poor were augmented by vitamin concentrates and iron.

Patients 2 and 7 did not have edema at the time of treatment. These patients were given "prophylactic" treatment with acacia in view of a long history of recurrent edema. Patient 2 had had edema for three years and patient 7 for eight years. It was deemed advisable to administer acacia in the hope that it would increase the colloidal osmotic pressure of the serum and help prevent subsequent edema. At the time of this writing such recurrence has not been reported in either case. One patient (6) who had received acacia two years earlier still had minute traces of it in the blood.

Those patients whose subsequent course has been recorded as "fair" required a second series of injections of acacia after dismissal from the hospital. For example, patient 4 required acacia four months later, patient 6 six months later and patient 8 eleven days later.

Cases 11 and 12, because of the therapeutic problems they presented, are reported in detail.

REPORT OF CASE

CASE 11.—An electric foreman aged 39 registered at the clinic complaining of peripheral edema of six months' duration. It had followed a sore throat which had been present for a few days. Previous to this illness he had been quite well and had passed an insurance examination one month before its onset. With the discovery of albuminuria, hypertension and erythrocyturia, he had been placed in bed on a diet low in salt and protein, and a diuretic regimen had been instituted. Nevertheless, orthopnea had developed, he had become more and more dyspneic and the edema of the lower extremities had progressed to massive proportions.

The patient, who was pallid, was well developed. Moist rales were present at the bases of both lungs. The transverse cardiac diameter was 12.0 cm. The aortic second sound was accentuated. The systolic blood pressure was 200 mm. of mercury and the diastolic pressure was 118 mm. There was definite pitting edema of ankles and legs but no ascites. Examination of the ocular fundi revealed sclerosis, grade 1, of the chronic hypertensive type and widespread retinitis with cotton-wool patches and retinal hemorrhages. The significant laboratory findings are listed in table 1.

A diagnosis of chronic glomerulonephritis with nephrotic features and superimposed diffuse arteriolar disease with hypertension, grade 3, and myocardial failure was made. The patient was given a salt free diet that furnished 2,000 calories. The daily diet contained 100 Gm. of protein. Potassium nitrate was administered three times a day in doses of 45 grains (3 Gm.). Sodium bicarbonate was administered four times a day in doses of 10 grains (0.65 Gm.). Phenobarbital was administered three times a day in doses of ½ grain (0.032 Gm.); in addition, 1½ grains (0.1 Gm.) of this drug was administered at bedtime. A total dose of 12 cat units of digitalis was administered in four days and 1 cat unit of the drug was administered daily thereafter. Acacia was administered on alternate days.

In the intervening days the patient was given 2 cc. of salyrgan for a total of four doses. During that time he lost 28½ pounds (13 Kg.) of fluid (fig. 1) and became free from

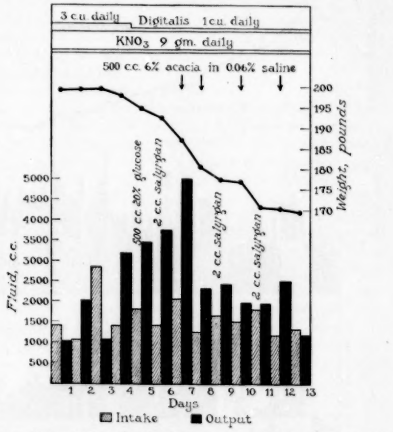

Fig. 1.—Response to the diuretic measures. Acacia played a role supplemental to digitalis, salyrgan and potassium nitrate; its usefulness is indicated by the massive urinary output of the seventh and twelfth days.

edema, orthopnea and dyspnea, and his general condition improved materially. He was dismissed from the hospital two weeks after admission with instructions to continue the diet and maintenance doses of digitalis and potassium nitrate. His blood pressure did not change as a result of this treatment.

This case differs from the first 10 presented in that nephrosis was complicated by vascular disease and cardiac insufficiency. The treatment of the two components of the illness was compatible, as evidenced by the successful termination after treatment in the hospital. The patient's prognosis is much more guarded than one of uncomplicated nephrosis. We present this problem as one in which treatment with acacia played a supplemental, yet important and effective, role in combating edema, the cause of which was cardiac as well as renal. However, we would not advocate treatment with acacia unless the concentration of protein in the serum is lowered and is considered an adequate cause of the edema.

CASE 12.—A man aged 33, who registered at the clinic in January 1940, had been well until September 1939, except for an occasional attack of sore throat. Four months prior to his registration at the clinic, edema of the legs had developed. His physician had made a diagnosis of nephritis and had placed him on a diet low in salt, protein and fluid. Nevertheless the

patient's vision had become blurred, the edema had increased and the systolic blood pressure had increased to more than 160 mm. of mercury.

When the patient was examined at the clinic, bilateral hydrothorax, ascites and massive edema of the sacrum, scrotum and lower extremities were present. He was orthopneic and vomited frequently. The blood pressure was 150 mm. systolic and 116 mm. diastolic. Examination of the ocular fundi gave negative results. The patient weighed 200 pounds (91 Kg.) and his height was 73 inches (185 cm.). The significant laboratory findings are included in table 1.

The patient was placed on a diet which yielded 2,000 calories; the diet contained 100 Gm. of protein, was free of salt and included 800 cc. of fluid daily. Nine Gm. of potassium nitrate was administered daily. He received three infusions of a 6 per cent solution of acacia in a 0.06 per cent solution of sodium chloride on three successive days. During the next fifteen days he was given intravenous injections of 500 cc. of a 20 per cent solution of dextrose in distilled water daily. In this interval he lost 20 pounds (9 Kg.). He then received four more daily infusions of acacia, and six doses of 1.0 cc. of salyrgan

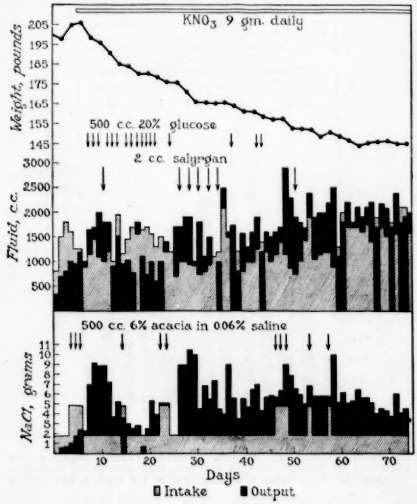

Fig. 2.—Effect of acacia on excretion of salt and urinary output of the nephrotic patient. Definite saline diuresis after each injection or series of injections of acacia may be noted. There is a concomitant increase in urinary output.

were administered intravenously in twelve days. On this regimen he lost 12 pounds (5.4 Kg.). By this time he had recovered his appetite and the dyspnea had decreased. He was comfortable except for an attack of acute otitis media, which lasted one week but responded well to chemotherapy. Because of a low basal metabolic rate he was given 1 grain (0.065 Gm.) of desiccated thyroid daily. Before his dismissal from the hospital the basal metabolic rate had risen to — 5. After fifty-eight days in the hospital he had lost 53 pounds (24 Kg.). He left the hospital after seventy-four days, at which time he weighed 145 pounds (66 Kg.), or 55 pounds (25 Kg.) less than on admission. Edema was absent. During the course of treatment he was given a total of 330 Gm. of acacia in eleven infusions of 500 cc. of a 6 per cent solution in a 0.06 per cent solution of sodium chloride with no ill results whatever. He is the first patient at the Mayo Clinic to receive such a large quantity of acacia.

Since the patient's dismissal from the hospital in March 1940 he has remained free from edema on a regimen of 6 Gm. of potassium nitrate daily and a diet low in fluids, free of salt and high in protein. The concentration of urea in the blood has remained at about 80 mg. per hundred cubic centimeters. On fairly limited activity he has felt extremely well.

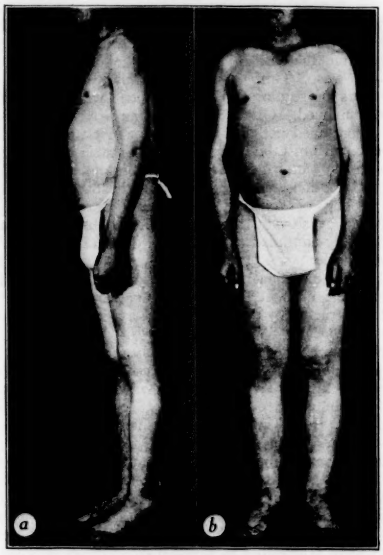

Fig. 3.—Body contour before treatment; *a*, profile view; *b*, front view.

Fig. 4.—Body contour after treatment and lapse of twenty months; *a*, profile view; *b*, front view.

The so-called salt free diet contained 1.8 Gm. of salt per day. From this and from the acacia solution the patient received a total of 166.2 Gm. of sodium chloride. Daily analyses of the urine for total excretion of salt were made and the output of sodium chloride during his hospitalization was 389.5 Gm. This large negative balance of sodium chloride is striking evidence that the retention of salt is a powerful factor in the production of nephrotic edema. The effect of acacia on the excretion of salt may be seen in figure 2. Following each administration of acacia there was a pronounced increase of sodium chloride in the urine.

Thus, acacia combats edema by its twofold action, namely mobilization of sodium chloride and reinforcement of the serum protein in maintaining the colloidal osmotic pressure. At the beginning of treatment the colloidal osmotic pressure was 117 mm. as compared to normal of 360. Unfortunately the osmotic pressure was not determined at the conclusion of treatment. This case is described to emphasize the importance of retention of salt as well as a low serum protein in the production of edema and to demonstrate the effect of acacia in combating these two factors. The value of administration of potassium salts, hypertonic solution of dextrose and salyrgan also is demonstrated. The concentration of proteins in the plasma decreased temporarily following treatment with acacia; this is probably a dilution phenomenon. The albumin-globulin ratio changed from 1:1.2 before treatment to the normal ratio of 1.4:1 after treatment.

The patient returned to the clinic on Sept. 22, 1941 for further examination. By comparison of figure 3 with figure 4 it may be seen how well the edema was controlled. Except for infected tonsils and blood pressure of 136 mm. systolic and 96 mm. diastolic, abnormal physical findings were absent. The significant laboratory findings at various intervals are listed in table 3. Of particular interest is the normal level to which the serum protein had risen in spite of persistent albuminuria. The patient weighed 151 pounds (68.5 Kg.) as compared to 146 pounds (66.2 Kg.) at the time of his dismissal from the clinic twenty months earlier. The concentration of hemoglobin had risen from 12.7 Gm. to 13.8 Gm. per hundred cubic centimeters of blood.

The patient underwent an uneventful tonsillectomy and returned home. He was advised to continue the regimen of potassium nitrate, iron, diet and minimal activity.

COMMENT

These cases are not reported as a series the volume of which is evidence for efficacy of the form of treatment we have described but as a description of the type of case for which acacia is beneficial and the rationale for its use.

Pirogoff.—The Crimean War produced another of the really great army surgeons of history, Nicolai Ivanovitch Pirogoff (1810-1881), who was in charge of the treatment of Russian troops in the siege of Sevastopol, which lasted for fourteen months. The conditions under which he had to work were appalling, and the number of men who died as a result of erysipelas, pyemia, hospital gangrene and purulent edema was so high that Pirogoff defined war as "a traumatic epidemic." Almost unaided he toiled at his great task, striving to improve conditions and making many sound recommendations to combat the prevailing sepsis. Through the influence of the Grand Duchess Helena Pavlovna he was able to introduce female nursing for the Russian soldiers at the time when Florence Nightingale was providing a similar organization for the British army. Pirogoff was a firm believer in the importance of early surgical treatment and was one of the first to adopt all the more recent advances of surgery, as is shown by his use of ether anesthesia in 1847 only a few months after this was first advocated by Bigelow, and of plaster of paris bandages in 1854, two years after Mathijsen's first description of this technic.—Trueta, Joseph: The Principles and Practice of War Surgery, St. Louis, C. V. Mosby Company, 1943.

ACUTE BACILLARY DYSENTERY (FLEXNER)

TREATMENT WITH SULFAGUANIDINE AND SUCCINYLSULFATHIAZOLE

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The control of acute bacillary dysentery is becoming increasingly important because of the presence of troops in tropical regions where this disease is common and also because of the poor housing and sanitary conditions which inevitably result from the mass shifting of civilian populations. During the past year numerous reports of the high incidence of this disease have come from the nations long at war; namely, China, Russia, Japan, Germany and Italy.

Uniformly favorable clinical results concerning the value of sulfaguanidine in the treatment of bacillary dysentery have been reported.[1] There are, however, few published reports of the use of the newer sulfonamide compound succinylsulfathiazole in the treatment of this disease. This drug was first synthesized in 1939 by Miller, Rock and Moore [2] and has been reported by Poth and Knotts and others [3] to have striking bacteriostatic action against the usual intestinal flora of man and also to be effective against strains of Shiga, Sonne and Flexner dysentery bacilli. Experience with the use of succinylsulfathiazole in the management of acute outbreaks of dysentery has been limited to a few cases occurring in widely separated parts of this country.[4] Our purpose in this communication is to report the effects of these two drugs in an epidemic of bacillary dysentery (Flexner) which occurred in Eloise Hospital and Infirmary during the summer of 1942.

EPIDEMIOLOGY

Starting late in July 1942 an increase in the incidence of diarrhea was noted at this hospital and within a short time five deaths had occurred among 32 patients with diarrhea. It was recognized that an epidemic of dysentery was occurring and that the organism was sufficiently virulent to produce a high case fatality rate. Therefore the Michigan State Department of Health was requested to give aid in its control.

From the William J. Seymour Hospital, Eloise, Mich., and the Bureau of Epidemiology, Michigan Department of Health, Lansing, Mich.

1. Marshall, E. K., Jr.; Bratton, A. C.; Edwards, Lydia B., and Walker, Ethel: Sulfanilylguanidine in the Treatment of Acute Bacillary Dysentery in Children, Bull. Johns Hopkins Hosp. **68**: 94 (Jan.) 1941. Lyon, G. M.: Chemotherapy in Acute Bacillary Dysentery, West Virginia M. J. **37**: 54 (Feb.) 1941. Rantz, Lowell A., and Kirby, William M. M.: The Use of Sulfaguanidine in the Treatment of Dysentery Carriers, J. A. M. A. **118**: 1268 (April 11) 1942.

2. Miller, Ellis; Rock, H. J., and Moore, M. L.: Substituted Sulfanilamides: N^4-Acyl Derivatives, J. Am. Chem. Soc. **61**: 1198, 1939.

3. Poth, E. J., and Knotts, F. L.: A New Bacteriostatic Agent Locally Active in the Gastrointestinal Tract, Proc. Soc. Exper. Biol. & Med. **48**: 129 (Oct.) 1941. Poth, E. J.; Knotts, F. L.; Lee, J. T., and Inni, Frank: Bacteriostatic Properties of Sulfanilamide and Some of Its Derivatives: I. Succinylsulfathiazole, a New Chemotherapeutic Agent Locally Active in the Gastrointestinal Tract, Arch. Surg. **44**: 187 (Feb.) 1942. Welch, A. D.; Mattis, P. A., and Latven, A. R.: A Toxicological Study of Succinylsulfathiazole, J. Pharmacol. & Exper. Therap. **75**: 231 (July) 1942.

4. Poth, E. J.; Chenoweth, B. M., and Knotts, F. L.: A Preliminary Report on the Treatment of Bacillary Dysentery with Succinylsulfathiazole, J. Lab. & Clin. Med. **28**: 162 (Nov.) 1942.

In the three divisions of the institution, psychopathic hospital, general hospital and infirmary, there were at the time of the outbreak 8,000 inmates and 1,800 employees. The patients are housed in fourteen buildings, each having a separate kitchen but a common supply of food, milk and water.

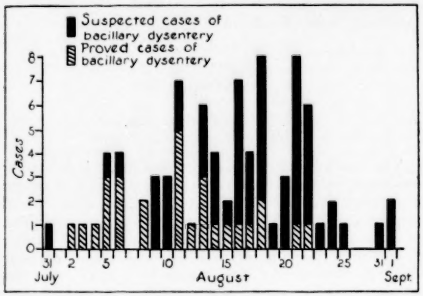

Chart 1.—The distribution of cases by date of onset, indicating occurrence of suspected and proved cases.

It was found that the outbreak began in two wards for chronically ill patients in one of the buildings which at the time had a patient census of 2,200. The first few patients in whom the diagnosis of bacillary dysentery (Flexner) was established were transferred to the acute general hospital building. Three patients in the general hospital developed the disease and in each case the infection could be readily explained by contact with these proved cases. In order to prevent additional secondary cases an isolation ward was established in a building which was closed at the time, and all patients at the institution who developed diarrhea were immediately moved to this building. Complete isolation was effected and no further secondary cases occurred. With the exception of two attendants, both of whom cared for patients ill with the disease, no cases were found among the hospital personnel. The distribution of cases by dates of onset is shown graphically in chart 1.

The fact that most of the cases occurred in one building and that the outbreak did not have the explosive character of milk or water borne outbreaks indicated quite definitely that food was the source of the infection. This evidence, coupled with the fact that cases developed in widely separated wards of the same building, and that hospital personnel who ate in a separate kitchen were not affected, indicated that the infection had its origin in the main kitchen, where food was prepared only for patients in this building.

To break the chain of infection and stop the epidemic, general control measures were immediately established and a search was made for a carrier or carriers among the food handlers employed in that building. This necessitated taking cultures of the stools from 328 individuals and of these, two inmates who served food in the patients' kitchen were found to have Bacterium flexneri organisms in their stools. That these men were the source of the original infection was never proved. Although neither was treated many subsequent stool specimens, including swabs taken directly from the rectal mucosa on three occasions, were negative. One of these men was admitted to the institution two weeks prior to the outbreak and gave a history of chronic vague abdominal pain.

For the purpose of completeness a survey was made to determine whether or not the water supply was safe. Investigation showed that the plumbing was protected by vacuum breakers, there were no submerged outlets and no cross connections were discovered. The milk supply was also investigated as a possible source of infection and found to be satisfactory.

METHOD OF STUDY

On admission to the isolation ward a complete blood count and urinalysis was done in each patient. Cultures of stools were taken daily by means of accepted bacteriologic and serologic methods. A total of 86 patients were isolated for observation during the epidemic and in 26 cases the diagnosis was proved by stool cultures. In 2 additional cases there were negative stool cultures but these were considered "probable cases." One patient had bloody diarrhea and a high temperature and died early in the epidemic in a ward where several positive cases later developed. The other had the characteristic symptoms of the disease and subsequently developed a high serum agglutination titer against the organisms known to have caused the outbreak. Repeated stool cultures were obtained from all positive cases for from six to eight weeks after release from isolation. When the diagnosis was suspected but the organisms could not be demonstrated in the stools, serum agglutination tests were done against Bacterium flexneri organisms isolated from the stools of other patients of this epidemic.

Treatment consisted in routine administration of camphorated tincture of opium and bismuth subcarbonate, and when indicated dehydration was controlled by parenteral fluids. One group of 12 patients was given sulfaguanidine; another group of 24 patients was given succinylsulfathiazole.[5] In most cases these drugs were started on the first or second day of the disease, but occasionally not until the third day of illness. With

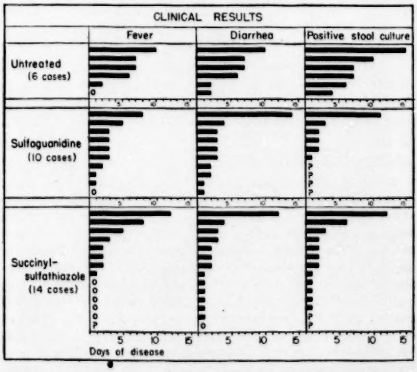

Chart 2.—A comparison of the clinical results in untreated, sulfaguanidine treated and succinylsulfathiazole treated cases. The symbol O indicates no fever or diarrhea. The question mark indicates inadequate data.

few exceptions the dosage of sulfaguanidine was 0.1 Gm. per kilogram of body weight initially and 0.3 Gm. per kilogram daily divided into six equal parts. The

5. Succinylsulfathiazole is marketed under the trade name of "sulfasuxidine" and is manufactured by Sharpe and Dohme Incorporated, Philadelphia, who supplied the drug used in this study.

dosage of succinylsulfathiazole was 0.25 Gm. per kilogram of body weight initially and 0.25 Gm. per kilogram daily divided into six equal parts given every four hours. The duration of sulfonamide therapy varied from two to fourteen days; most patients were treated for six days.

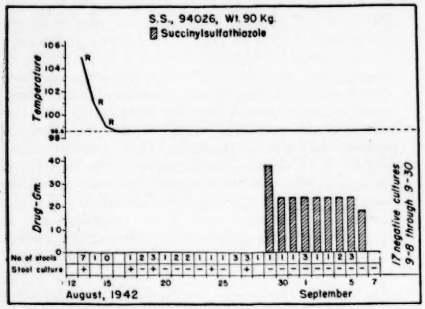

Chart 3.—The development of a "carrier state" in a patient untreated for sixteen days, later cured with succinylsulfathiazole.

On alternate days during sulfonamide therapy complete urinalyses, determinations of hemoglobin, white blood cell counts and sulfonamide blood concentrations by means of the method of Bratton and Marshall [6] were obtained. Values for succinylsulfathiazole were expressed as "free" sulfathiazole and as total sulfonamide.

CLINICAL RESULTS

In this analysis of the clinical results of treatment discussion will be limited to the 26 proved and the 2 probable cases of acute bacillary dysentery. These cases are divided into three groups: the first group, 6 patients, received no sulfonamide therapy; the second group, 10 patients, were treated with sulfaguanidine; the third group, 14 patients, were treated with succinylsulfathiazole.[7]

Except for the first few patients the day of onset of symptoms could be established with considerable accuracy because all patients were under constant observation by trained hospital personnel who had been instructed to report the occurrence of diarrhea in any inmate. This permitted the isolation and institution of chemotherapy early in the course of the disease. The clinical results are summarized in chart 2.

Group 1 (untreated): There were 6 patients who received no sulfonamide drug and of these 5 were proven cases, whereas 1 was considered a probable case. There were four deaths in this group and autopsies were performed in 2 of these. In both cases throughout the descending colon and rectum there was severe hyperemia, multiple petechial hemorrhages and shallow 1-2 mm. ulcerations. Bacterium flexneri organisms were cultured from the ulcers in both cases.

Of the 2 patients who recovered, 1 remained febrile for six days and had a nonbloody diarrhea for three days. The stool cultures remained positive through the fourth day of the disease and then became persistently negative during a period of four weeks. The other patient (S. S., chart 3) was a white man aged 50 with a fractured humerus but otherwise in good physical condition. On the day of onset of dysentery his temperature rose to 104.8 F. (rectal) and he had seven watery stools. The following day the diarrhea subsided and by the third day his temperature was normal. However, during a period of sixteen days Bacterium flexneri organisms were recovered from his stools on five different occasions. He was then treated with succinylsulfathiazole and all subsequent cultures, twenty-seven in thirty-one days, were negative. (This patient is also included in group 3.)

Group 2 (treated with sulfaguanidine): Ten of the 12 patients who were treated with sulfaguanidine are included in this group; 9 were positive cases and one a probable case. In 7 of 10 patients the temperature returned to normal after three days of therapy; another patient remained febrile for eight days. There was one death in this group, a man who was first given treatment on the sixth day of dysentery. He seemed to be responding favorably, but on the fourth day of treatment his temperature rose to 103 F. (rectal) and the following day he died. At autopsy the mucosa of the colon was hyperemic and presented shallow ulcers; cultures of these lesions were negative.

Diarrhea was controlled in 8 of the 10 cases after three days of therapy and in the fatal case after four days of treatment. The other patient (G. R.) continued to have diarrhea for fourteen days while receiving sulfaguanidine and was therefore treated with succinylsulfathiazole. (This case is included in both groups 2 and 3.)

Stool cultures became negative in 5 cases after three days of sulfaguanidine therapy. In 4 cases cultures of the stools were not taken at frequent enough intervals to determine the exact date on which the feces were rendered free from pathogenic organisms. In the patient who was later treated with succinylsulfathiazole

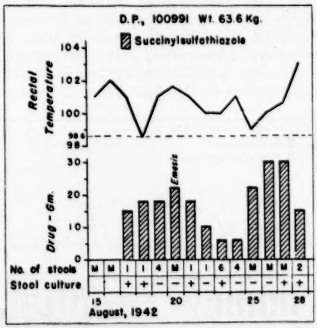

Chart 4.—Fatal termination in a case treated with succinylsulfathiazole for twelve days.

(G. R.) stool cultures were positive on the eleventh day of sulfaguanidine therapy.

Group 3 (treated with succinylsulfathiazole): Fourteen of the 24 cases treated with succinylsulfathiazole are included in this group; one of these cases (S. S., chart 3) was previously discussed among the untreated cases and another (G. R.) was included among those treated with sulfaguanidine. The duration of fever in this group was comparable to that observed in group 2.

6. Bratton, A. C., and Marshall, E. K., Jr.: A New Coupling Component for Sulfanilamide Determination, J. Biol. Chem. **128**: 537 (May) 1939.

7. In group 1 is included a patient who later was given succinylsulfathiazole and is therefore also included in group 3. In group 2 is 1 patient treated first with sulfaguanidine and later with succinylsulfathiazole and this case is also included in group 3.

In the 1 fatal case in this group the temperature continued elevated for fifteen days; in 1 case it remained elevated for eight days and in another for five days. Five other patients became afebrile after three days of treatment. In the remaining patients in this group the temperature was normal at the time succinylsulfathiazole was started and remained normal throughout the period of treatment.

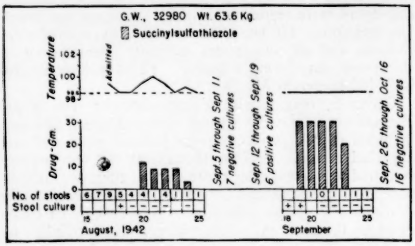

Chart 5.—The development of a "carrier state" in a case treated with small doses of succinylsulfathiazole, later cured with larger doses.

Diarrhea was controlled in 11 of the 14 cases after three days of therapy. Of the 3 remaining patients in this group 1 had no diarrhea when therapy was begun, 1 had diarrhea for six days and the last patient (D. P., chart 4) represented the 1 fatal case in this group. This man was 81 years old and had been hospitalized for more than one year because of atherosclerotic heart disease. Treatment was started on the third day of the disease, but in spite of the fact that the dose was increased to approximately 0.5 Gm. per kilogram of body weight daily he had bloody stools almost constantly and died on the fifteenth day of the illness.

Cultures of the stools from 12 of the 14 patients of this group were taken daily; thus the exact day on which stools became negative could be determined. In 10 of these 12 cases the stool cultures were negative after three days of treatment; of the other 2 cases stool cultures remained positive for six days in 1 and twelve days in the other (D. P., chart 4).

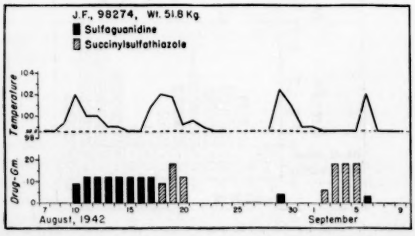

Chart 6.—Drug fever occurring with the administration of sulfaguanidine and later produced by the readministration of the same drug. No fever following the readministration of succinylsulfathiazole.

One of the patients in this group (G. W., chart 5) received 0.15 Gm. of succinylsulfathiazole per kilogram of body weight initially and 0.15 Gm. per kilogram daily for approximately four days. Throughout the period of treatment and for the next sixteen days eleven stool cultures were negative. Then on six consecutive days the stool cultures were positive. A second course of succinylsulfathiazole was given, using 0.5 Gm. per kilogram as the intial dose and the same amount daily in six divided doses for four days. The stool cultures became negative after one day on this dose and remained so throughout an observation period of twenty-three days.

BLOOD CONCENTRATIONS OF THE DRUGS

The blood sulfonamide concentrations and the corresponding total dosage of drug administered at the time of the determination in the sulfonamide treated patients are summarized in table 1. Although the values obtained for blood concentrations of sulfaguanidine in this series of cases are comparable, for the most part, with the values reported in other investigations, we observed 2 patients in whom unusually high concentrations occurred. In 1 case a blood concentration of 10 mg. per hundred cubic centimeters was observed following the administration of 81 Gm. of sulfaguanidine in eight days. In the other case a blood concentration of 16.6 mg. per hundred cubic centimeters followed the administration of 27.5 Gm. of sulfaguanidine in three days.

TABLE 1.—*Total Dosage and Corresponding Blood Concentrations of Sulfaguanidine in Twelve Cases*

Patient	Weight, Kg.	Total Dose in Grams to Date	Blood Concentration of Drug, Mg. per 100 Cc.
T. T.	81.8	48.5	1.0
		78.5	2.3
J. S.	60.9	15.0	3.2
		81.0	10.0
		105.0	7.2
C. K.	71.4	28.0	7.7
G. R.	48	32.0	4.3
		53.0	5.6
		68.0	6.2
		108.5	8.3
J. F.	51.8	48.0	0.9
		72.0	1.5
M. N.	60	36.0	2.1
W. S.	81.8	54.0	5.0
F. K.	54.1	45.0	3.2
R. G.	56.4	27.5	16.6
		57.5	4.6
J. T.	43.2	41.0	4.3
J. P.	68	25.0	4.5
		85.0	5.3
R. H.	75.5	72.0	3.6
		120.0	14.3

The blood sulfaguanidine value in the latter case is higher than any values previously reported; the highest reported value with which we are familiar is 10 mg. per hundred cubic centimeters.[8] The values for blood concentration of succinylsulfathiazole in this series were consistently low and are comparable with the values reported by others.[3] In no instance did the free sulfathiazole exceed 1.39 mg. per hundred cubic centimeters or the total succinylsulfathiazole 1.45 mg. per hundred cubic centimeters.

Toxicity.—Slight vomiting occurred in 1 case with each drug. No nausea, rash or hematuria was observed. Sulfonamide crystals were found in 6 of the 10 patients who received sulfaguanidine and in 10 of the 14 who received succinylsulfathiazole. These urine specimens were examined four to six hours after voiding. Because the presence of crystalluria had not been previously reported in patients who had received succinylsulfathiazole, we administered this drug to 10 patients hospitalized for other conditions and who were in a normal

8. Kirsner, J. B.; Rodaniche, Enid C., and Palmer, W. L.: Use of Sulfaguanidine in Nonspecific Ulcerative Colitis and Other Infections of Bowel, Am. J. Digest. Dis. **9**: 229 (July) 1942.

state of hydration. Urine specimens were collected after four days of administration of this drug and were examined within one hour after voiding. There were no sulfonamide crystals in any of these cases.

One patient (J. F., chart 6) who received sulfaguanidine developed a drug fever. At the time this drug was started his temperature was 102 F. and after four days of therapy it had returned to normal. Sulfaguanidine was continued for four more days, at which time his temperature again rose to 102 F. This second

TABLE 2.—*Total Dosage and Corresponding Blood Concentrations of Succinylsulfathiazole in Twenty-Four Cases*

Patient	Weight, Kg.	Total Dose in Grams to Date	Blood Concentration of Drug, Mg. per 100 Cc. Free	Total
M. S.	50.8	34.0	0.87	0.89
		58.0	0.35	0.41
		78.0	0.25	0.5
J. B.	65.9	64.0	0.77	1.12
		100.0	0.41	0.51
		122.0	0.23	0.25
J. F.	51.8	15.0	0.92	1.0
A. S.	48.7	104.0	0.73	1.07
		144.0	0.66	0.81
		168.0	0.53	0.57
J. P. B.	56.8	50.0	0.61	0.82
		80.0	1.0	1.08
		101.0	0.19	0.5
F. K.	54.1	87.5	0.97	0.99
		145.0	0.33	0.5
P. L.	62.3	27.5	1.39	1.45
		57.5	0.33	0.46
D. P.	63.6	57.0	0.40	0.45
		159.0	0.50	1.10
		219.0	1.0	1.39
G. W.	61.4	16.5	0.19	0.19
		43.5	0.3	0.46
M. S.	63.5	81.0	0.38	0.40
W. H.	50	37.0	0.21	0.37
G. G.	77.7	25.0	0.29	0.41
S. D.	60.9	18.0	0.1	0.17
		30.0	0.49	0.54
		48.0	0.69	0.27
		60.0	0.50	0.48
S. S.	99.1	70.5	0.20	0.18
		118.5	0.70	0.68
		166.5	0.20	0.46
			0.28	0.25
J. A.	56.8	24.0	0.39	0.41
		48.0	0.42	0.45
		68.0	0.46	0.91
W. B.	59.5	115.0	0.82	0.86
J. K.	62.3	39.0	0.31	0.32
P. McM.	67.3	42.5	0.32	0.34
R. N.	73.6	63.0	0.25	0.27
A. G.	45	41.0	0.64	0.65
H. S.	60.5	49.0	0.08	0.11
		75.0	0.38	0.41
A. T.	75.9	40.0	0.2	0.31
		76.0	0.6	0.74
J. R.	73	98.0	0.4	0.6
E. S.	52.3	48	0.87	0.63
		84	0.58	0.57

elevation in temperature was at first thought to be a result of continued gastrointestinal infection and because sulfaguanidine was apparently not effective it was discontinued and succinylsulfathiazole substituted. After three days of treatment with the latter drug the temperature returned to normal. A later analysis of the case revealed that during the second febrile period there was no diarrhea and the stool cultures were negative. This suggested that this fever was due to drug sensitivity rather than to continued bacillary infection. Therefore, twelve days after sulfaguanidine was discontinued the patient was again given 4 Gm. of this drug in one dose. Three hours later he became dyspneic and cyanotic and his temperature rose to 102 F. but returned to normal within forty-eight hours. No similar toxic reaction followed the readministration of succinylsulfathiazole. However, when sulfaguanidine was given for a third time the temperature rose to 101.6 F.

This observation led us to investigate further the readministration of each of these drugs. Eight other patients who had previously received sulfaguanidine

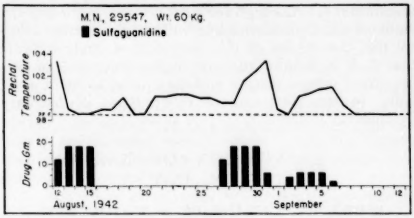

Chart 7.—The occurrence of fever during the readmination of sulfaguanidine.

were given a second course of the drug, and 2 of these exhibited febrile reactions. That these patients were sensitive to this drug was further demonstrated by the production of similar reactions during a third course of the drug. These cases are illustrated in charts 7 and 8.

Twelve patients who had previously been treated with succinylsulfathiazole were given a second course of this drug and in no case did a febrile reaction occur.

The occurrence of febrile reactions following the readministration of sulfathiazole was first reported from this hospital by Lyons and Balberor.[9] The present study indicates a similar hypersensitivity to the readministration of sulfaguanidine.

CONCLUSIONS

It is evident from this study of 28 cases that both sulfaguanidine and succinylsulfathiazole are of distinct value in the treatment of acute bacillary dysentery (Flexner). It must be emphasized, however, that failures have occurred following the use of each of these drugs. Because succinylsulfathiazole is equally effective, and because it is without the potential toxic effects of sulfaguanidine, we believe that it is the drug of choice in the treatment of acute bacillary dysentery (Flexner).

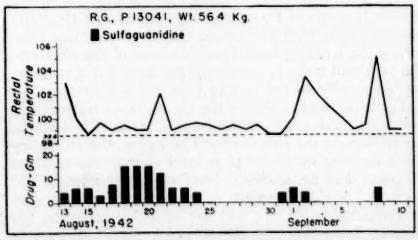

Chart 8.—The occurrence of fever during the readministration of sulfaguanidine.

We consider that succinylsulfathiazole given in doses of 0.25 Gm. per kilogram initially and 0.25 Gm. per kilogram daily for at least six consecutive days was adequate to effect a cure in 12 of 14, or 85 per cent, of our cases. We observed that doses of twice this

9. Lyons, Richard H., and Balberor, Harry: Febrile Reactions Accompanying the Readministration of Sulfathiazole, J. A. M. A. **118:** 955 (March 21) 1942.

amount may be administered without untoward reactions and it is suggested that if fever and diarrhea are not controlled after three days of therapy with the smaller doses twice the amount of the original dose be given.

We wish to stress the importance of repeated stool cultures for at least three weeks after therapy has been discontinued. Although the final decision regarding the value of succinylsulfathiazole will require further clinical use, the results of this comparative study indicate that it is a definite advance in the treatment of this important enteric disease and may prove to be of great value in the treatment of other types of bacillary dysentery.

THE PREVENTION OF EAR DISABILITY IN INDUSTRY

REPORT ON THE USE OF A PLASTIC MOLD

DAVID A. McCOY, M.D.
BOSTON

The innocuously progressive loss of hearing as encountered in industrial work associated with continuous exposure to noise has been a refractory disability problem. This is so not only by reason of the lack of an adequate treatment but also because essential precautions are imperfect and rarely instituted. Perhaps this is largely due to the fact that there has been no remedy which is both efficient in its function and acceptable to the worker.

TYPES OF EAR DAMAGE

The significance of "boilermaker's ear" is well known among workers. In otologic practice it represents the clinical entity due to acoustic trauma. The deafness is relative to prolonged and repeated exposure to loud noises and particularly loud sounds of the high frequency range. In present day industry there are two factors which have accentuated the possibility of this disability. There is a demand for an unparalleled speed of production requiring an added number of men in limited areas in which there was already sufficient noise to be hazardous. An example of this is the work on the airplane assembly line and specifically in the shipyards, where work in confined areas such as in the double bottoms of transports is required. In the latter instance men with pneumatic chipping hammers must follow the welding bead along the side of the ship, and the resultant noise is sufficient to cause even a passerby on the outside of the hull to experience discomfort.

For a point of reference the threshold of immediately painful sound varies between 112 and 129 decibels, depending on the frequency. The higher the frequency the lower the threshold of painful sound. An airplane propeller has an intensity level of approximately 120 decibels. A rivet hammer or a chipping hammer may be estimated at 115 to 140 decibels, depending on the distance from the hammer at which the noise level is taken. A stream of air under high compression (150 pounds) passing out the customary 5/8 inch diameter outlet varies from 105 to 130 decibels when 2 feet to 6 inches from the opening. In comparison, conversational speech at 10 to 20 feet varies from 68 to 30 decibels. It should be remembered that the effect of the noise on the ear is also directly related to the duration of exposure as well as to the distance from the source.

From the Medical Research Department, Liberty Mutual Insurance Company.

A type of ear damage not seen frequently before is now confronting the industrial physician. With the advent of the intensive use of welding and the resultant necessity for the chipping of the weld metal, direct damage to the ear canal, drum and middle ear is becoming common. The small flying balls of hot slag to which the worker is exposed as he works in various positions ricochet through the ear canal, leaving damage both from burning and from trauma. In this type of work there is a continuous dispersion in all directions of these metallic particles requiring the worker to be outfitted in stiff, thick leather to protect his body.

PREVIOUS REMEDIES

The use of cotton in the ear is an old standby and, though not effective in reducing the noise, does serve to keep out foreign material. Rubber ear stoppers have been used but, owing to the molding required of the plug to accommodate its presence in the canal, points of pressure develop which prevent their use over too long a period of time without symptomatic reaction. As a result of this they are usually kept in the pocket or thrown away. The use of material such as paper and rags is unsanitary and hazardous but a common practice.

By audiometric reading cotton lowers sound 10 to 15 decibels, depending on the efficiency with which it is packed in the canal. Rubber ear defenders lower sound 20 to 25 decibels. The plastic ear mold lowers sound 25 to 30 decibels in the speech range and 30 to 40 decibels in the high frequency range.

THE PLASTIC EAR MOLD[1]

The problem has been to have an ear stopper which not only eliminates the hazards of intensive noise and stops the entrance of foreign material but also is so acceptable to the worker that he will permit its use for long and repeated periods. In order to fulfil these requirements the ear canal was plugged just below the beginning of the bony portion with two small wads of cotton. Wet plaster was then put into the remaining outside portion of the canal and the immediately related portion of the concha. This is easily removed when hardened, carrying with it the uppermost piece of cotton. The other piece of cotton is removed and the plaster cast is transformed through a mold into an exact reproduction in transparent, plastic lucite. This procedure has been used for years to produce the perforated ear unit for hearing aids. Thus each ear has its individual plastic mold stopper, which carries the obvious advantages of having no pressure points, of eliminating

Fig. 1.—General shape of ear mold.

1. Supplied by the National Ear Mold Company.

completely the danger from foreign material and of definitely reducing the intensity of the noise.

In addition it may be said that the plastic withstands heavy blows, is noninflammable, will not shatter and cut the wearer, and has a relatively low coefficient of expansion. It is nonresistant to alcohol. Also the mold causes no inconvenience to the wearer, for once in place the upper portion of the mold and the lower portion to a lesser degree lock behind the overlapping roll of the concha, preventing its coming out without actual manual removal.

Fig. 2.—How ear mold fits into ear.

EFFICIENCY OF THE PLASTIC EAR MOLD

Audiometric examination reveals that loud noises are reduced approximately 30 to 40 decibels, yet the ordinary conversational tone is distinguished without trouble.

In the California Shipbuilding Corporation thirty workers who were exposed to noise in various occupations were fitted with ear molds. These workers included welders, chippers, burners and buffers. After a period of ten days' use these workers were subjected to questioning with the following results.

QUESTIONS AND ANSWERS

1. *Q.*—How did the sharp clattering noises and sounds in your work affect you? *A.* (representative).—Chipper: "I had to quit and get away from it every ten minutes or so to get relief. I was trying to get a transfer into the open. At the end of the day my head always ached and my ears rang." Burner: "In tight places noise hurts. When the day is over you can't hardly hear. The wife claimed I was irritable and the ringing bothered my sleep."

2. *Q.*—How effective are the ear molds in reducing these noises? *A.*—All stated that the intense noise was eliminated.

3 (*a*). *Q.*—Have you had trouble with foreign matter in your ears? *A.*—Most complained of dust and rust scale, particularly the scalers and buffers. Five had had slag burns of the ear. Two of these had had ear drums ruptured from flying hot metal; a permanent disability was evident in one of the two.

3 (*b*). *Q.*—While wearing the ear molds were you bothered by foreign matter? *A.*—In no case did the molds fail to keep out the foreign material.

4. *Q.*—How do the ear molds fit your ears? Is there any irritation? Are they comfortable? Are they easy to manipulate? *A.*—The ear molds caused no irritation. The men wore them constantly without removing them during their working hours. All stated that they were comfortable and easy to manipulate in and out.

5. *Q.*—Do you find that the ear molds help you in your work in any way? *A.* (represented most clearly by actual quotation).—"That noise was a big distraction but these molds took that away. I believe I do more work in a day now." "These are aces high. My ears are not under pressure any more." "I can hear the fellows talk but the noise is gone."

6. *Q.*—Does wearing the ear molds during working hours affect your leisure hours? (This question was asked because a large percentage of the men entering the field hospital complained of ringing in the ears, partial deafness, nervous irritability and occasionally trouble in sleeping. Most of these cases of temporary partial deafness and ringing in the ears were relieved automatically by morning, but there was some complaint of continued trouble.) *A.*—Relief in all cases of irritative symptoms after working hours was experienced.

7. *Q.*—How do these ear molds compare with other ear stoppers you have tried? *A.*—The ear molds were given preference. The objections to other types were those outlined earlier.

Knowing the obvious disadvantages of accepting this type of evidence as accurate, it nevertheless serves to establish the point that the molds are acceptable to the worker. In support of this is the fact that approximately five hundred workers have voluntarily bought these molds without any advertising by the ear mold company.

SUMMARY AND CONCLUSIONS

A new type of ear stopper, a plastic ear mold, offers as its advantages:

1. It is relatively indestructible.
2. It is efficient in diminishing intense and high frequency noises, yet permits conversation.
3. It is a sure block for foreign material.
4. It is light, transparent and easily cleaned.

The finished product is a die cast reproduction of a plaster model. Each ear being different, a new plaster cast is made for each and every stopper. Thus the exactness of fit is obtained to eliminate sound leaks and to prevent irritating points of pressure.

A trial of 30 cases was made by pertinent questions following two weeks' usage.[2] The following conclusions therefore seem justified:

1. The hazard of loud noise can be eliminated by these plastic ear molds.
2. Slag burns and foreign bodies involving the ears can be prevented.
3. Elimination of prolonged and repeated exposure to noise is obtained with the resultant eradication of irritative symptoms which should allow greater concentration on the job and increase of production.
4. A solution is thus offered for certain industrial ear problems.

175 Berkeley Street.

2. Trials made at California Shipbuilding Corporation, David A. McCoy, M.D., chief of eye, ear, nose and throat department.

The Changes in an Apple.—The manufacturer of foodstuffs is the plant. It takes carbon dioxide from the air and water from the soil and builds up complex compounds by means of the energy furnished by the sun's rays. The simplest compounds formed from carbon dioxide and water are formaldehyde and simpler acids related to formaldehyde. Acids appear first in the process of synthesizing food substances. Because of this fact, unripe fruit is sour. A boy who steals an apple in September makes a "sour" face. But the plant is industrious. It repeats the process, combining 2, 4, 6 molecules of formaldehyde, giving rise to sugar. In October the acids in the apple have been transformed into grape sugar, and the apple is sweet. Now man reaps the crop, but the plant continues to manufacture. It combines 2 molecules of grape sugar to form malt sugar, malt sugar molecules combine to form dextrin, and by uniting dextrin molecules the plant makes starch. In November the apple loses its sugar and becomes mealy. Then the plant combines starch molecules to form cellulose. In December the apple is no longer sour, sweet or mealy but as tough as wood.—Kahn, Fritz: Man in Structure and Function, volume 1, translated from the German and edited by George Rosen, M.D., New York, Alfred A. Knopf, 1943.

JAUNDICE OCCURRING ONE TO FOUR MONTHS AFTER TRANSFUSION OF BLOOD OR PLASMA

REPORT OF SEVEN CASES

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The purpose of this communication is to report 7 cases of jaundice which occurred one to four months after transfusions of whole blood or plasma and to suggest that these illnesses were probably caused by the transfusions.

There are on record a number of instances in which inoculation of groups of people with human plasma, serum or lymph has resulted in outbreaks of an illness resembling catarrhal jaundice. A distinctive feature of these cases has been a long incubation period, varying between four and thirty weeks, the majority being between eight and eighteen weeks. The first large outbreak occurred in 1883-1884 among workers in a Bremen shipyard, who were vaccinated with human lymph derived from cases of vaccinia. From one to seven months later 191 of 1,289 persons became jaundiced, while 500 other workers in the same shipyard, vaccinated with a different lot of lymph, remained free of the disease.[1] In England in 1937-1938, 41 cases of jaundice occurred among a group of 109 children who had been inoculated with a preparation of human convalescent plasma for passive protection against measles.[2] Yellow fever vaccination, using vaccines containing human serum, has been the cause of several outbreaks of hepatitis. These occurred in England,[3] in Brazil [4] and recently in American soldiers.[5] Evidence has pointed to the human serum in the vaccines as the source of jaundice in each of these outbreaks; as a consequence, the vaccines now being used are made without human serum.

A memorandum has recently been issued by the British Ministry of Health on the subject of "Homologous Serum Jaundice."[6] This document supplies details of the hepatitis referred to previously which followed measles convalescent plasma. In addition, an outbreak of jaundice is described involving 86 members of a group of 266 soldiers who had been inoculated with convalescent plasma from mumps patients. Finally it is stated that 12 cases of jaundice have been reported, from several sources, in persons who had previously been given transfusions of plasma or of whole blood. The memorandum contains useful data on the clinical manifestations of this form of hepatitis.

The clinical features of these illnesses have resembled to some extent those of common infective hepatitis or catarrhal jaundice. Certain manifestations, however, have been noted in the "homologous serum" cases which may assist in clinical differentiation. Urticaria and various types of erythema are described. For example, skin rashes were noted in 41.7 per cent of the "mumps plasma" cases. Also a transient generalized arthritis has been an early manifestation in some instances. In most cases the symptoms were mild, but some of the affected persons were severely ill, and deaths occurred. In the cases among American soldiers which followed yellow fever vaccination the fatality rate was stated to be about 0.2 per cent, but in the English children who received measles convalescent plasma the disease was apparently much more severe, there being eight fatalities among 41 cases.

Comparable with the foregoing experiences in human beings are some observations which have been made in horses. Jaundice has been noted in horses from one to six months after they have received injections of horse blood or serum given for the purpose of immunization against such diseases as African horse sickness,[7] equine encephalomyelitis,[8] anthrax [9] and grass sickness.[5]

The cause of these diseases has not been established, although a number of theories have been suggested.[10] The explanation which has generally been favored is that the jaundice is caused by a virus which happened to be present in the body fluids of the donors and which, after a long incubation period, produced a hepatitis in the recipient. Another suggestion is that this disease is the result of an immune mechanism in which, following inoculation with homologous blood or plasma, an individual develops antibodies which cause injury to his own tissues.

The connection between the preceding inoculation and the subsequent jaundice has been recognized in previous instances because of the simultaneous occurrence of a considerable number of cases among persons who had all been inoculated with a single material. It is reasonable to suppose that this sequence of events may have occurred on other occasions, involving smaller numbers of persons, and that the relationship may have been overlooked because of the long interval which elapsed between the inoculation and the subsequent jaundice. Recently 2 patients (1 and 2) have been treated in Grady Hospital in each of whom jaundice had occurred several weeks after transfusion of blood or plasma. In addition, examination of the hospital records for the years 1940, 1941 and 1942 revealed 4 more examples (cases 3, 4, 5 and 6). These were among a group of 79 cases in which a diagnosis of "acute catarrhal jaundice" or "toxic hepatitis" had been made. Thus in one hospital, among a total of 81 persons ill with "catarrhal jaundice" or "toxic hepatitis" there were 6 who had recently received transfusions. The seventh case which I am reporting was noted by Dr. Charles Harris in a relative of his who underwent a subtotal gastrectomy at Emory University Hospital, Atlanta. The patient received several transfusions at the time of his operation. On recovery from the operation he returned to his home in Texas, and there, approximately three months after the transfusions, he developed jaundice. He was not admitted to a hospital, but sufficient information has been obtained to show

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1. Hirsch's Handbook of Geographical and Historical Pathology, translated from the German Edition by C. Creighton, London, New Sydenham Society, 1886, vol. 3, pp. 420 and 424.

2. Propert, S. A.: Hepatitis After Prophylactic Serum, Brit. M. J. **2**:677 (Sept. 24) 1938. McNalty, A. S.: Annual Report of the Chief Medical Officer, Ministry of Health, for the Year 1937, London, H. M. Stationery Office, 1938, p. 38. Homologous Serum Jaundice.[6]

3. Findlay, G. M., and MacCallum, F. O.: Hepatitis and Jaundice Associated with Immunization Against Certain Virus Diseases, Proc. Roy. Soc. Med. **31**: 799 (May) 1938.

4. Fox, J. P.; Manso, Caio; Penna, H. A., and Pará, Madureira: Observations on the Occurrence of Icterus in Brazil Following Vaccination Against Yellow Fever, Am. J. Hyg. **36**: 68 (July) 1942.

5. Jaundice Following Yellow Fever Vaccination, editorial, J. A. M. A. **119**: 1110 (Aug. 1) 1942. The Outbreak of Jaundice in the Army: Circular Letter No. 95, S. G. O., J. A. M. A. **120**: 51 (Sept. 5) 1942.

6. Homologous Serum Jaundice: Memorandum Prepared by Medical Officers of the Ministry of Health, Lancet **1**: 83 (Jan. 16) 1943.

7. Theiler, A.: Acute Liver Atrophy and Parenchymatous Hepatitis in Horses, 5th and 6th Reports of the Director of Veterinary Research, Union of South Africa, Dept. of Agriculture, 1918, p. 7.

8. Cox, H. R.; Phillip, C. B.; Marsh, Hadleigh, and Kilpatrick, J. W.: Observations Incident to an Outbreak of Equine Encephalomyelitis in the Bitterroot Valley of Western Montana, J. Am. Vet. M. A. **93**: 225 (Oct.) 1938.

9. Slagsvold, L.: Ikterus hos hester behandlet med miltbrandserum, Norsk. vet. tidskr. **50**: 69, 1938.

10. Findlay and MacCallum.[3] Fox, Manso, Penna and Pará.[4]

that his illness was similar clinically to those of the other patients in this series. A diagnosis of "catarrhal jaundice" was made by his attending physician.

The principal data of the 7 cases are presented in the accompanying tables. The clinical diagnosis which had been made in 6 of them was "acute catarrhal jaundice," while a diagnosis of "toxic hepatitis" had been made in 1 case (6). None of the patients were severely ill. A point of interest is the fact that a skin eruption and joint pains were the initial symptoms in case 3 and that in case 6 the initial symptom was a generalized urticaria. As noted previously, skin eruptions and arthritis have occurred frequently in "homologous serum jaundice."

Four of these 7 patients received four or more transfusions, involving relatively large volumes of blood or

TABLE 1.—*Data on Relationship of Transfusions to Occurrence of Jaundice: Seven Cases*

Case	Age	Sex	Color	Condition for Which Transfusions Were Given	Transfusions of Pooled Plasma		Transfusions of Citrated Blood		Date of Onset of Symptoms	Interval Between Last Transfusion and Onset of Symptoms, Days	Interval Between First Transfusion and Onset of Symptoms, Days
					Date	Amount, Cc.	Date	Amount, Cc.			
1	53	♂	W	Burns of body and limbs	8/24/42 8/25/42 8/27/42 8/30/42 9/16/42	1,000 1,000 500 600 250	9/17/42 9/25/42	650 500	10/28/42	33	65
2	46	♀	N	Hysterectomy, salpingo-oophorectomy and appendectomy	None		10/ 6/42 10/ 9/42 10/10/42 10/13/42	500 500 500 500	2/ 2/43	111	119
3	45	♀	W	Perineorrhaphy and hysterectomy	None		1/ 5/41	500	4/21/41	106	106
4	70	♂	N	Midthigh amputation, following injury	None		1/ 5/41	650	3/15/41	69	69
5	24	♀	W	Salpingo-oophorectomy for ruptured ectopic pregnancy	4/24/42 4/25/42 4/25/42	1,000 500 750	4/25/42 4/27/42 4/30/42 5/ 2/42 5/ 5/42	550 500 200 550 600	6/12/42	38	49
6	36	♀	N	Hysterectomy, salpingo-oophorectomy and appendectomy	None		3/31/42	700	6/12/42	73	73
7	60	♂	W	Subtotal gastrectomy for peptic ulcer	8/27/42	50	8/29/42 8/31/42 9/ 2/42 9/ 5/42 9/10/42	500 500 500 500 500	11/28/42	79	93

TABLE 2.—*Clinical Features of Seven Cases of Jaundice Following Transfusions*

Case	Symptoms	Physical Examination	Course of Illness	Laboratory Findings
1	None except jaundice	Moderate jaundice of sclerae and skin; liver edge just palpable, not tender; spleen not felt	Admitted on 3d day of illness; remained 40 days; no fever; always felt well; jaundice increased first 3 weeks, then began to fade; still a faint trace 105 days after onset	No anemia; leukocytes 10,800, 78% polys.; fell to 6,200, 54% polys.; urine contained bile on admission, not on discharge; feces contained no bile first 10 days; icterus index 40 on admission, rose to 80, fell to 12
2	Anorexia, headache, epigastric pain, vomiting, "cream colored" stools, constipation, dark urine	Jaundice of sclerae and buccal mucosa; moderate tenderness in right upper quadrant; liver and spleen not felt	Admitted on 2d day of illness; remained 28 days; no fever; symptoms subsided after 3d day in hospital	No anemia; leukocytes 6,500, 72% polys.; urine gave 4+ test for bile on admission, trace 7 days later; feces always positive for bile; icterus index 44 on admission, 28 5th day, 19 12th day
3	Onset with headache, swelling and tenderness of knees, elbows, fingers and toes; second day numerous "red bumps" on feet and ankles; third day nausea, vomiting, anorexia; felt feverish; severe palpitation	Paroxysmal auricular tachycardia (this occurred also during previous hospital admission); tenderness and swelling of "all joints"; jaundice of sclerae and skin noted on second hospital day; no abdominal tenderness; liver and spleen not felt	Admitted on 9th day of illness; remained 12 days; daily temperature elevation 99-100 first 6 days, normal thereafter; pain in left side of epigastrium first 2 days, comfortable thereafter; tachycardia controlled by quinidine; jaundice diminished on discharge and not noted at follow-up 2 weeks later	No anemia; leukocytes 6,850, 64% polys.; urine never gave positive test for bile; feces not examined for bile; icterus index 29 on admission, 44 on 8th day
4	Crampy epigastric pain, vomiting, anorexia; no change in color of urine or stools	Jaundice of sclerae and skin; slight tenderness in right upper quadrant; liver not felt; thought to be small; spleen not felt	Admitted on 5th day of illness; remained 25 days; symptoms subsided after few days; jaundice diminished while in hospital	No anemia; leukocytes 6,200, 77% polys.; urine positive for bile on admission and also 7 days later, negative 7 days after that; feces always contained bile; icterus index 133 on admission, fell steadily to 28 on discharge
5	Nausea, vomiting, epigastric fulness	Jaundice of sclerae and skin; dehydration; liver and spleen not felt; no tenderness	Admitted on 4th day of illness; remained 14 days; comfortable after 4th day; jaundice fading on 10th day and no longer evident 5 weeks after onset	No anemia; leukocytes 6,450, 72% polys.; urine positive for bile on 2d day, negative on 14th day; feces always contained bile; icterus index 36 on 2d day, 20 on 9th day
6	Onset with urticaria all over body; 3 days later headache, anorexia, epigastric pain, nausea and vomiting, chilliness; noted jaundice on tenth day	Jaundice of sclerae; no tenderness; liver and spleen not felt	Admitted on 15th day of illness; remained 44 days; little change in icterus; no further gastrointestinal symptoms	No anemia; leukocytes 6,500, 72% polys.; urine gave 4+ test for bile on admission, only a trace 7 days later; feces always contained bile; icterus index 25 on admission, 57 on 9th day, 33 at time of discharge
7	Nausea, anorexia, vomiting, feverish; light colored stools; dark colored urine; jaundice noted on sixth day	No record	Stools remained light in color for 12 days; urine was dark for 20 days; jaundice evident for 34 days; lost 15 pounds in weight, then rapidly regained it; attending physician made diagnosis of "catarrhal jaundice"	No record

plasma. This is probably significant only to the extent that the risk of receiving a jaundice producing substance in a transfusion may be increased in proportion to the number of donors from whom blood or plasma is received. The volume alone does not seem to be an important factor, since the volume of human serum or plasma which caused the postvaccination cases was comparatively small. It has not been possible to trace the donors of the blood or plasma given to these patients.[11] However, in some previous outbreaks of this disease the donors have been traced and have not presented any evidence of illness subsequent to the time at which they gave blood.

Three coincidences in dates appear in this series of cases. Patients 3 and 4 were given transfusions on the same day, Jan. 5, 1941. However, since 1 was white and 1 a Negro, and since flasks of blood are never pooled, there is almost no possibility that they received any of the same material. Patients 1 and 7 received multiple transfusions between Aug. 24 and Sept. 10, 1942. They were in different Atlanta hospitals. In cases 5 and 6 the onset of symptoms occurred on the same day, June 12, 1942, although patient 6 had received her transfusion more than three weeks earlier than patient 5. The significance of these coincidences cannot be decided at present.

The present large scale use of blood and plasma transfusion may lead to the occurrence of a considerable number of such cases of hepatitis. It seems highly probable that they may be occurring not infrequently but are not being recognized. If one were not aware of the fact that jaundice may follow inoculation with homologous serum or plasma after a long latent period, one would be unlikely to attach any significance to a history of transfusion three months previous to the onset of a patient's illness. The real frequency of this complication of transfusion will be known only when there has been a concerted effort by physicians to recognize such cases.

Two practical measures are indicated for the investigation of this problem. First, a careful record should be kept of the source of blood or plasma administered to each patient. Second, a small portion of blood or plasma should be set aside at the time a transfusion is given, so that, in the event of subsequent cases of hepatitis, some of the causative material will be available for study.

SUMMARY

Seven persons who had received transfusions of blood or plasma at the time of injuries or surgical operations became ill one to four months afterward, with symptoms resembling those of catarrhal jaundice. It is suggested that these illnesses were probably caused by the transfusions.

Basis for the suggestion is a number of reported instances in which immunizations against different diseases, using homologous serum, plasma or lymph, have resulted in the occurrence of jaundice in significant numbers of the recipients. A distinctive feature in these outbreaks has been a long incubation period, varying from one to seven months.

Isolated cases, such as those reported here, may be occurring more frequently than is appreciated.

11. The blood and plasma used in Grady Hospital are prepared as follows: Blood is drawn into a liter flask containing sodium citrate. The flask is sealed immediately and stored in a refrigerator at 5 C. until needed. It is never mixed with any other blood. If a flask is not used within seven days the plasma is siphoned from the cells and pooled with plasma from three or four other flasks. Whole blood, therefore, is derived from only one donor, while plasma may be derived from four or five different donors.

SIXTY CASES OF PNEUMOCOCCIC MENINGITIS TREATED WITH SULFONAMIDES

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In 1939 one of us [1] reported 17 cases of pneumococcic meningitis treated with sulfapyridine at Sydenham Hospital between October 1938 and May 1939 with recovery of 8 patients (47 per cent). We have since then had occasion to treat 43 more patients at Sydenham Hospital and at the Harriet Lane Home of the Johns Hopkins Hospital. Since there is considerable variation in the mortality figures reported in case series from other hospitals [2] it seemed to us worth while to report our own cases and analyze our experience.

Prior to the introduction of sulfonamide therapy the mortality in pneumococcic meningitis was nearly 99 per cent. The Goldsteins [3] reviewed the literature in 1927 and were able to collect 150 authentic reports of recovery from this disease. Between 1930 and 1936 no specific therapy was used at Sydenham Hospital and all 29 patients died. From December 1936 to October 1938 17 patients were treated with sulfanilamide at Sydenham and only 1 recovered. At the Harriet Lane Home, of 8 patients who received sulfanilamide 1 recovered but had severe residual damage to the spinal cord.

In October 1938 sulfapyridine came into use both at Harriet Lane and at Sydenham; since then sulfapyridine, sulfathiazole, sulfadiazine or sulfapyrazine has been used in each case. Our ideas concerning the details of treatment have changed gradually in the last three years, and we prefer not to establish a set routine of treatment. However, we shall attempt to describe the general principles which we follow.

METHOD OF TREATMENT

Sulfonamide Therapy.—As soon as the diagnosis of meningitis is established by the presence of cloudy spinal fluid, a blood culture and nasopharyngeal cultures are obtained and the patient is then given the sodium salt of one of the sulfonamides intravenously. Children are given 0.025 to 0.050 Gm. of the sodium salt per kilogram of body weight, freshly made up in a 5 per cent solution with distilled water. At the same time the patient receives 0.1 to 0.2 Gm. per kilogram of body weight of the sulfonamide by mouth or, if unconscious, by stomach tube. From then on approximately 0.2 Gm. per kilogram of body weight is given every twenty-four hours, divided into six or eight doses. Adults usually receive 3 Gm. intravenously and 2 to 4 Gm. by mouth as an initial dose, and 1.5 Gm. every four hours

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1. Hodes, H. L.; Gimbel, H. S., and Burnett, G. W.: Treatment of Pneumococcic Meningitis with Sulfapyridine and the Sodium Salt of Sulfapyridine, J. A. M. A. **113:** 1614 (Oct. 28) 1939.

2. Steele, C. W., and Gottlieb, Julius: Treatment of Pneumococcic Meningitis with Sulfanilamide and Sulfapyridine: A Statistical Study of All Reported Cases in Which Chemotherapy Was Used, With or Without Specific Antipneumococcus Serum, Arch. Int. Med. **68:** 211 (Aug.) 1941. Rhoades, P. S.; Hoyne, A. L.; Levin, Benjamin; Horswell, R. G.; Reals, W. H., and Fox, W. W.: Treatment of Pneumococcic Meningitis, J. A. M. A. **115:** 917 (Sept. 14) 1940. Dowling, H. F.; Dauer, C. C.; Feldman, H. A., and Hartman, C. R.: Pneumococcal Meningitis: Study of 72 Cases, New England J. Med. **226:** 1015 (June) 1942. Neal, Appelbaum and Jackson,[4] Dingle and Finland.[5]

3. Goldstein, H. Z., and Goldstein, H. I.: Review of Literature on Pneumococcus Meningitis, Internat. Clin. **3:** 1007 (Dec.) 1940.

thereafter. During the early period of treatment the blood level of the sulfonamide is determined daily. In our first group of patients we attempted to maintain very high drug levels, but we find that our results are equally good with concentrations of 8 to 12 mg. per hundred cubic centimeters and we rarely find it necessary to give the drug intravenously after the initial dose. The sulfonamide is usually continued for two weeks after the temperature has dropped to normal. It is not withdrawn unless the spinal fluid is sterile and has a normal sugar content and the patient appears well. Some of our patients showed definite clinical improvement within twenty-four hours of admission, but others who eventually recovered remained ill for as long as ten days.

Eleven of our 60 patients have shown some toxic effect of the sulfonamides. Of these 6 developed gross or microscopic hematuria. When this occurred early in the course of the disease the patient's fluid intake was increased and the hematuria cleared. When blood appeared in the urine at a time when the patient was clinically well, drug therapy was discontinued. Two of our patients developed "drug fever," 1 a drug rash, and 2 showed leukopenia. All of the latter manifestations of sensitivity to the drug occurred during convalescence and not one was fatal.

Serum Therapy.—In our first series of 17 cases previously reported [1] type specific antipneumococcus rabbit serum was not used. In our subsequent cases we have used serum for most of our patients under 2 years of age and for those older patients who seemed severely ill, especially when pneumonia was present. At first we gave the serum intravenously as soon as it could be obtained, usually within a very few hours after admission. We gave it in large amounts, with 80,000 to 100,000 units as an initial dose, so that several patients received 300,000 to 400,000 units in all, and one as many as 750,000 units. If the patient did not respond rapidly to treatment, he was given serum intrathecally. However, a number of the infants seemed to grow rapidly worse following these massive doses of serum. Accordingly we have modified our method of treatment as follows: On admission the spinal fluid is examined for pneumococci, which, if present, are immediately typed by the Neufeld-Sabin method. A culture of the spinal fluid is taken and its sugar content is estimated. If the patient is under 2 years of age, has pneumonia or seems severely ill, type specific rabbit serum is usually given intravenously, about twelve hours after sulfonamide therapy has been instituted. It seems to us that serum administered in this way causes fewer severe reactions. From 20,000 to 40,000 units is given as the initial dose. Subsequently from 20,000 to 40,000 units of serum is administered each day until it can be demonstrated that the patient's serum diluted 1:5 with isotonic solution of sodium chloride produces definite capsular swelling of a culture of the patient's own pneumococci. We no longer give intrathecal serum.

TABLE 1.—*Distribution of Cases of Pneumococcic Meningitis*

	Number of Cases	Recovered	Percentage Recovered
Sydenham first series (previously reported)	17	8	47
Sydenham second series	17	10	57
Harriet Lane Home	26	7	27
Total	60	25	42

Lumbar Punctures.—A lumbar puncture is performed on admission for diagnostic purposes. It is repeated only if the patient fails to improve or if he develops a drug reaction and the condition of the spinal fluid must be checked before the sulfonamide is discontinued.

Fluids.—These are given freely by mouth. We do not limit the fluid intake in order to maintain a higher drug level. In fact fluids are forced, especially when sulfadiazine is employed, since a reduction in the fluid intake seems to contribute to the hematuria which is frequently encountered with this drug.

TABLE 2.—*Results With and Without Serum Therapy*

	With Serum			Without Serum		
	Died	Recovered	Total	Died	Recovered	Total
Under 2	12	6	18	13	1	14
Over 2	4	7	11	6	11	18
Total	16	13	29	19	12	32

Sedation.—Many of our patients are restless or wildly delirious. We feel that the safest drug in these cases is paraldehyde, administered intramuscularly or by stomach tube. We do not use morphine or codeine, since these drugs even in small doses seem to cause respiratory depression in the presence of purulent meningitis.

Surgical Drainage of Foci of Infection.—Mastoidectomy or surgical drainage of infected sinuses was originally thought to be of the utmost importance.[4] We prefer to treat the patient conservatively, deferring operation until his general condition is greatly improved, i. e. usually for two or three weeks at least. We believe that this delay of surgical intervention has contributed to recovery in a number of our cases.

RESULTS OF THERAPY

With the method of treatment outlined, 22 per cent of the patients under 2 years of age and 64 per cent of those over 2 recovered; that is, 42 per cent of our 60 patients recovered. All of these received sulfonamide therapy. Twenty-nine of the patients received serum in addition. It is noteworthy that only 1 child under the age of 2 recovered without serum, whereas 13 died. Almost all of these, however, were critically ill on admission and died within twenty-four hours. We do not feel justified therefore in concluding definitely that the patients treated with serum have a more favorable outlook than those who receive sulfonamide therapy alone.

COMMENT

Pneumococci were cultured from the spinal fluid in all cases. The type isolated did not seem to alter the prognosis so far as we could determine from this relatively small group of cases.

In 1 case the pneumococcus obtained from the spinal fluid gave a positive Neufeld-Sabin reaction with both type VII and type XXIV rabbit serum. It is interesting to note in retrospect that, although we treated the patient with both type specific serums, we were probably dealing with a single organism, namely type VII c. Kauffman, Morch and Schmith [5] have shown that this organism and type XXIV share a common capsular antigen.

4. Neal, Josephine B.; Applebaum, Emanuel, and Jackson, H. W.: Sulfapyridine and Its Sodium Salt in the Treatment of Meningitis Due to the Pneumococcus and Hemophilus Influenzae, J. A. M. A. **115**: 2055 (Dec. 14) 1940.

5. Kauffman, F.; Morch, E., and Schmith, K.: On Serology of Pneumococcus Group, J. Immunol. **39**:397 (Nov.) 1940.

Two of our patients are interesting in that they had previously recovered from meningitis caused by another organism. R. B., a 4 month old Negro baby, was treated in the Harriet Lane Home for meningitis due to Hemophilus influenzae. He received concentrated anti-influenza rabbit serum, also sulfapyridine and sulfadiazine; a bilateral mastoidectomy was performed and the patient made a complete recovery. Two months later he returned and was found to have meningitis due to

TABLE 3.—*Types of Pneumococcus Isolated from Spinal Fluid*

Type	No. of Cases	Died	Recovered	Type	No. of Cases	Died	Recovered
1	3	1	2	14	4	2	2
2	2	2	..	16	2	2	..
3	4	1	3	18	1	..	1
4	4	3	1	18a	1	1	..
5	4	2	2	19	4	2	2
6	6	4	2	21	1	1	..
7	1	..	1	22	2	1	1
7c	1	..	1	23	6	4	2
8	1	1	..	25	1	1	..
9	2	..	2	27	1	1	..
10	1	1	..	29	1	1	..
11	1	1	..	31	1	1	..
12	4	2	2	33	1	1	..

the type VI pneumococcus. With type specific antiserum and sulfathiazole the patient again recovered completely and has remained well.[6] G. C., an 8 month old Negro baby, was admitted to the Harriet Lane Home with septicemia and meningitis due to a group I meningococcus. He recovered slowly, but at the end of the second week in the hospital his temperature rose and a spinal puncture revealed the presence of type XIX pneumococci. These were still present three days later. The patient recovered under sulfapyridine therapy.

Linell and Robinson[7] investigated 7 cases of pneumococcic meningitis which came to autopsy and emphasized that in such cases there is frequently evidence of previous trauma to the head. Injury in 3 of their cases had occurred as long as fourteen, five and two and a half years prior to the onset of meningitis. In only 1 of our cases could we elicit a history of previous head injury, and even here there was no evidence of skull fracture.

The blood culture from 33 of our 60 patients yielded a pneumococcus: of these, 13 (39 per cent) recovered. Of 24 patients the initial blood culture was sterile: of these, 10 (42 per cent) recovered. One patient who died was found to have hemolytic Staphylococcus aureus in the blood stream. In 2 cases no blood culture was taken. It seems that the presence or absence of organisms in the blood had little to do with the course of the disease.

It is well known that a primary focus of infection can frequently, though by no means always, be found in pneumococcic meningitis. In many of our patients otitis media of varying degrees of severity was present. One child was completely deaf on admission and had purulent otitis media for three days. Under sulfonamide therapy, without operative intervention, he recovered completely. A mastoidectomy was performed on 4 patients. Two patients showed purulent discharge from the sinuses, and it was necessary in 1 of these to drain the sinuses. Pneumonia preceded the onset of meningitis in 9 of the patients who died but only in 4 of those who survived.

All our patients have remained well since discharge and, with 1 exception, have no apparent sequelae. One infant, D. M., a 10 month old Negro boy, was treated with sulfathiazole and 500,000 units of antiserum. His spinal fluid cultures remained positive for at least two months, and the baby was discharged from the hospital with symptoms of chronic meningitis, hydrocephalus and weakness of the right arm. At present he is 2 years old and appears to be of normal mental development. There is some residual weakness of the right hand but no indication of hydrocephalus.

Our series is too small to allow comparison of the relative efficacy of the different sulfonamides in pneumococcic meningitis. Suffice it to say that 19 of the 25 patients who recovered received sulfapyridine either alone or in combination with another sulfonamide. Three received both sulfadiazine and sulfathiazole; 1 received sulfadiazine and sulfapyrazine, 1 received sulfadiazine alone and 1 sulfathiazole alone. It is our impression that all these drugs are probably equally effective in the treatment of this disease.

FACTORS INFLUENCING PROGNOSIS

Age.—In reviewing our cases we have been struck by the difference in the recovery rate depending on the age of the patient. Only 22 per cent of our patients under 2 years of age recovered, in contrast to 64 per cent of those over the age of 2. One factor which contributes to the high mortality in infants is the delay in instituting treatment. The family does not recognize the serious nature of the illness in an infant as readily as in an adult, and the signs of meningitis may not be clear to the attending physician. Of our 32 patients under 2 years of age 10 died within twenty-four hours of admission. The high fatality rate among infants explains why only 27 per cent of the Harriet Lane Home patients recovered, whereas Sydenham Hospital, where most of the patients with this disease are adults, had a recovery rate of 53 per cent.

Presence of Other Disease.—Patients with congenital anomalies, chronic infections or some other acute infection in addition to meningitis have a poor outlook. Three of our patients who died had congenital syphilis; in 2, congenital malformations of the heart were discovered at autopsy; another was suffering from generalized peritonitis.

TABLE 4.—*Recoveries by Ages*

	Number of Cases	Recovered	Percentage Recovered
Under 2 years	32	7	22
Over 2 years	28	18	64
Total	60	25	42

Presence of Pneumonia.—Patients who develop pneumococcic meningitis following pneumonia have, in general, a poor prognosis. This fact is noted by Dingle and Finland[8] and is also borne out by our experience.

CONCLUSION

In our experience the mortality rate in pneumococcic meningitis is not so high as some authors have suggested. The sulfonamides and serum administered in adequate but not massive doses bring about an encour-

6. Zepp, H. D., and Hodes, H. L.: Proc. Soc. Exper. Biol. & Med., to be published.
7. Linell, A. E., and Robinson, W. L.: Head Injuries and Meningitis, J. Neurol. & Psychiat. **4**:23 (Jan.) 1941.
8. Dingle, J. H., and Finland, Maxwell: Diagnosis, Treatment and Prevention of Meningococcus Meningitis with a Résumé of the Practical Aspects of Treatment of Other Acute Bacterial Meningitides, War Med. **2**:1 (Jan.) 1942.

aging proportion of cures, except in the patients under 2 years of age. Moreover, however ill the patient may seem when first seen, one should not give up hope: though it is true, by and large, that a patient admitted in coma has a grave prognosis, several of our patients have recovered completely after appearing moribund on arrival.

SUMMARY

1. Sixty patients with pneumococcic meningitis were treated with sulfonamides.

2. Of these 60, 25 (42 per cent) recovered. Thirty-two of the patients were under 2 years of age; of these 7 (22 per cent) recovered. Twenty-eight of the patients were over 2 years of age; of these 18 (64 per cent) recovered.

3. While our experience with sulfapyridine has been greater, the results obtained with the newer sulfonamides have been satisfactory.

Harford Road at Herring Run.

THE RELATIVE VALUE OF PECTIN SOLUTION IN SHOCK

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AND
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DETROIT

Von Ziemssen in 1892, on the basis of clinical observations, was perhaps the first to note that in shock and hemorrhage "salt infusion was of benefit only for a short time as compared with blood transfusion." Blalock [1] sums up the present day view based on both clinical and experimental observations: "There is no doubt but that the intravascular volume can be temporarily increased by the direct introduction of salt solutions into the vascular system. Prompt temporary response of most patients with depleted blood volume to such treatment is well known. It is equally well known that this favorable response is often disappointingly transient, and the blood stream again becomes dehydrated and the circulatory impairment progresses in spite of the continued introduction of fluid. The introduction of aqueous solutions dilutes the plasma colloids in the blood stream. Tissue edema develops while the blood stream remains dehydrated. If there is extensive capillary damage so that protein escapes with fluid, the continuous administration of fluid by vein washes out more protein and as a result may actually reduce rather than increase the volume of circulating blood. What has been said applies to all crystalloid solutions, according to Amberson,[2] "no matter how ingeniously contrived."

Since the crystalloid solutions do not restore and maintain blood volume or blood pressure they obviously are not to be used in the progressive oligemic anoxia of shock. By the same token, solutions for the treatment of shock must contain colloidal constituents whose physical properties are such that they will remain in the circulation for extended periods, maintaining blood volume and blood pressure.

From the Department of Laboratories and the Department of Surgery, Henry Ford Hospital.
Read before the Section on Pathology and Physiology at the Ninety-Third Annual Session of the American Medical Association, Atlantic City, N. J., June 11, 1942.

1. Blalock, Alfred: Principles of Surgical Care, St. Louis, C. V. Mosby Company, 1940.
2. Amberson, W. R.: Blood Substitutes, Biol. Rev. **12**: 48, 1937.

Blood plasma and blood serum have become thoroughly established as replacement fluids in shock, even when accompanied by hemorrhage, and are increasingly available in both military and civilian practice, so that they must now be considered standards for the evaluation of other colloidal solutions used for this purpose. Their dependability in restoring and maintaining blood volume and blood pressure needs no further elaboration or discussion, but the physicochemical mechanism by which this is accomplished unfortunately still is controversial. This is unfortunate because if settled the criteria would be better for the selection of colloidal fluids which are not derived from the blood or body fluids of either man or animals.

TABLE 1.—*Chemical Analysis of Pectin*

	Per Cent
Moisture	5 to 10
Ash	0.5 to 4
*p*H of 1% aqueous solution	3 to 4
Galacturonic acid	70 to 85
Pentoses and pentosans	0 to 10
Methoxyl group	8 to 11.5

The intravenous use of pectin solutions for the prevention and treatment of shock was proposed earlier, and this communication is submitted as an evaluation and progress report.

SOURCE OF PECTIN

Braconnot in 1825 demonstrated the existence of pectin in fruits and vegetables. About the same time Fremy showed that pectin played an important role in the firmness of fruit during maturation. In citrus fruits pectin occurs largely in the white peel portion (albedo) just beneath the outer ring (flaredo). It is present with cellulose in a cold water insoluble form known as "propectin." Propectin is converted to pectin by slightly acid solutions. Hot acid solutions are used for extraction from fruit. After clarification and concentration pectin may be precipitated with alcohol, washed and dried. Only sound fruit is used for the production of pectin, as the enzymes from unsound fruit would greatly reduce the yield. Citric acid is produced from unsound fruit. Acid extraction and alcohol precipitation produce a pure protein free product—"pectinum" N. F. VII.

TABLE 2.—*Effect of Autoclaving at Fifteen Pounds (250 F.) on Average Molecular Weight of Pectin Precipitated from 1 per Cent Solutions*

Time of Autoclaving at 250 F., Hours	Pectin A		Pectin B
	Natural *p*H 3.3	Adjusted to *p*H 4.9	Natural *p*H 3.4
0	240,000	226,000	196,000
¼	121,000	75,000	104,000
½	69,000	40,000	60,000
1	50,000	31,000	45,000
2	19,000	16,000	18,000

DESCRIPTION AND PHYSICAL PROPERTIES (JOSEPH)

Pectin is a coarse or fine powder, almost odorless and with a mucilaginous taste. It dissolves in cold or hot water, forming viscous opalescent colloidal solutions up to 5 per cent concentration. Hydrolysis produces pectic acid or pectates.

CHEMICAL CONSTITUTION

Pectin consists principally of partially methoxylated polygalacturonic acids and the formula, according to Schneider, is given in table 1.

The pectin molecule is thought to be composed of chains of partially methoxylated galacturonic anhydride units. This molecule contains no protein or sulfur. The molecular weight is in the order of 150,000 to 300,000.

VISCOSITY AND MOLECULAR WEIGHT DEPENDING ON PREPARATION

In an earlier publication [3] it was noted that unheated solutions of pectin were not well tolerated by animals. The unheated material tended to accumulate in the liver. Hueper [4] has recently demonstrated that unheated pectin, like other macromolecular substances, is taken up by the reticuloendothelial system throughout the body. Heated or sterilized solutions, especially if the p_H was adjusted to 5 before sterilization, were found to be well tolerated in three different laboratory animals, and the accumulation in the liver and other tissues proved slight and of short duration. This empiric finding has been adhered to in producing all subsequent solutions. The explanation lies in the partial hydrolysis with reduction in the viscosity and molecular weight, as illustrated by Joseph and Bryant in table 2.

It is noted in table 2 that autoclaving pectin A when the p_H was adjusted to 4.9 for fifteen minutes at 15 pounds reduced the molecular weight to 75,000 or to within the range of blood plasma.

METHOD OF PREPARATION

The usefulness of the pectin solution depends for the most part on the method of preparation and sterilization; hence the label should indicate the physical characteristics of the solution and also by what procedures those were obtained.

Ten Gm. of dry pectin powder (pectinum) is dissolved in 1,000 cc. of cold double distilled water with constant stirring. The resulting solution is turbid and is immediately filtered through coarse filter paper. Heating of the solution is then started in the Arnold sterilizer at temperatures of from 200 to 212 C. Heating is continuous for from fifteen to eighteen hours except for filtration through No. 50 filter paper three times, at intervals of four to five hours. At the end of the heating period and the four filtrations the solution is passed through bacteriologic Seitz filters with pressure into sterile bottles containing enough sodium chloride to make a 0.9 per cent concentration.

With this procedure the solutions obtained should be almost water clear and free of yellow color. The p_H is about 3.5 and a buffer must be added before use. The buffer preferred is prepared by dissolving 285 Gm. of sodium biphosphate ($NaH_2PO_4H_2O$) in 1,000 cc. of water and adjusting to p_H 7 with 10 per cent sodium hydroxide solution.

Before salting and buffering, a pectin solution prepared as described should have a viscosity at 38 C. of 3, osmotic pressure 55 mm. of mercury and molecular weight of 60,000 to 75,000.

Pectin solutions of 0.75 per cent, 1.5 per cent, and so on may be prepared in the same manner. Obviously the physical properties will be different from those of the 1 per cent solution described. For example, the 0.75 per cent solution prepared in a similar manner will have a viscosity at 38 C. of 2 and an osmotic pressure of 45 mm. of mercury, while the 1.5 per cent solution with the same preparation will have a viscosity of 4 at a temperature of 38 C. and an osmotic pressure of 70 mm. of mercury.

TABLE 3.—*Experiments in Which Bleeding Was Followed by the Injection of 0.75 per Cent Solution of Pectin*

Dog	Date	Body Weight, Kg.	Calculated Blood Volume, Cc.	Quantity of Blood Lost, Cc.	Percentage of Blood Volume	Pectin, 0.75% Solution, Cc.	Result
1	10/ 5/41	10.9	872	500	57	600	Recovery
2	10/14/41	10.4	832	500	60	400	Recovery
3	10/14/41	10.0	800	600	75	600	Recovery
4	10/14/41	10.4	832	550	66.6	600	Died 2 weeks later; intussusception
5	10/24/41	21.6	1,728	1,025	60	1,000	Recovery
6	10/24/41	20.9	1,672	975	58	1,000	Died 6 days later; ruptured artery

TABLE 4.—*Control Experiments in Which Blood Was Withdrawn and Saline Solution Was Injected After the Bleeding*

Dog	Date	Body Weight, Kg.	Calculated Blood Volume, Cc.	Quantity of Blood Lost, Cc.	Percentage of Blood Volume	Salt Solution, Cc.	Duration of Bleeding, Minutes	Result
7	10/25/41	9.5	760	550	72	700	15	Died
8	10/25/41	9.5	760	400	52	550	15	Recovery
9	10/25/41	9.5	760	450	57	1,000	15	Died
10	10/25/41	9.5	760	450	57	1,000	15	Died
11	10/25/41	9.5	760	500	65	1,000	15	Recovery

TABLE 5.—*Experiments in Which Red Blood Cells in Saline Solution Were Injected During the Bleeding and 0.75 per Cent Pectin After the Bleeding*

Dog	Date, 1941	Body Weight, Kg.	Calculated Blood Volume, Cc.	Quantity of Blood Lost, Cc.	Percentage of Blood Volume	Pectin, 0.75% Solution, Cc.	Salt Solution, Cc.	Red Blood Cell Suspension, Cc.	Plasma Protein after Bleeding, Gm. %	Result
12	10/28	15.0	1,200	1,200	100+	300	850	750	2.33	Recovery
13	10/29	15.0	1,200	2,300	100+	500	900	1,200	2.18	Recovery
14	10/30	16.2	1,296	1,650	100+	300	1,300	700	1.57	Died 4 days later; distemper
15	11/ 1	16.0	1,280	1,650	100+	400	1,000	700	0.64	Died; hemorrhage

3. Hartman, F. W.; Schelling, Victor; Harkins, H. N., and Brush, Brock: Pectin Solution as a Blood Substitute, Ann. Surg. **114**: 212 (Aug.) 1941.

4. Hueper, W. C.: Macromolecular Substances as Pathogenic Agents, Arch. Path. **33**: 267 (Feb.) 1942.

Pectin solutions of the various concentrations prepared according to the method described have more recently been reprecipitated with alcohol and desiccated to form a fine light powder which may be readily redissolved in sterile water, isotonic solution of sodium chloride or dextrose to make salted, buffered solutions ready for immediate intravenous use. A report on the use of this latest solution will be given in a subsequent communication.

PHYSICAL EFFECT OF PECTIN ON THE BLOOD

In vitro pectin increases the sedimentation of the red cells in citrated blood, and greater acceleration is seen in saline suspensions of red blood cells. The tendency to rapid sedimentation is reduced when the sterilized buffered solutions described are used. When pectin is given intravenously the sedimentation rate of blood removed is also increased. The rapid sedimentation does not apparently occur in the circulation, as no untoward symptoms were noted by patients and no evidence of this was found in animals coming to autopsy.

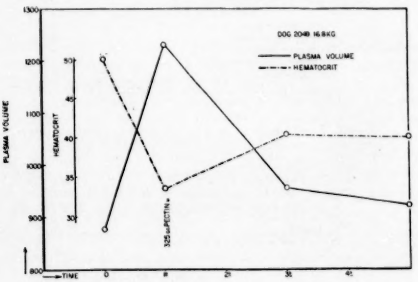

Chart 1.—Plasma volume (Evans blue method) and hematocrit readings after intravenous injection of sterile 0.75 per cent pectin solution.

Coagulation time of the blood remained at normal levels and intravenous clotting has never been observed following the use of the solution described. Bleeding time was shortened, corresponding to some degree to the numerous reports from 1925 to the present on the use of pectin as a hemostatic agent with local, oral, intramuscular and intravenous administration.[5]

INTRAVENOUS USE IN ANIMALS

The autoclaved 0.75 per cent solutions of pectin are well tolerated by the larger experimental animals in amounts of 40 to 60 cc. per kilogram, provided it is given at rates of from 3 to 5 cc. a minute. Very large doses and rapid administration result in vomiting and diarrhea.

These untoward symptoms may readily be explained on the basis of the large increases in blood volume demonstrated by the Evans blue dye method (chart 1). Apparently the material is retained in the circulation for three to four hours and may in addition draw some fluid from the tissues; hence with 40 cc. per kilogram the blood volume would be increased 50 per cent and with 60 cc. per kilogram it would be increased 75 per cent. This is in contrast to electrolyte solutions, which leave the circulation almost as rapidly as they are injected if administered at 3 to 5 cc. a minute. Another factor that contraindicates too large and too rapid infusion

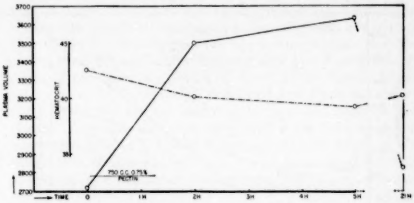

Chart 2 (patient J. P.).—Plasma volume (Evans blue method) and hematocrit readings after the intravenous injection of sterile 0.75 per cent pectin solution. Solid line, plasma volume; broken line, hematocrit. Smyth and Jacobson.

is the viscosity of 4, which is about the same as whole blood.

In experimental shock produced by hemorrhage in which 52 to 75 per cent of the blood volume was removed and replaced with pectin there was 100 per cent recovery (table 3). In contrast, when 52 to 75 per cent of the animal's blood was removed and replaced with isotonic solution of sodium chloride, 3 out of 5 animals died (table 4). Kymographic records show that the blood pressure is readily restored and maintained by employing pectin solutions as replacement fluids.

Bile peritonitis employed by Harkins for the production of experimental shock invariably results in extreme hemoconcentration and death because of the large amount of exudation into the peritoneal cavity. However, pectin has proved quite effective in combating both the hemoconcentration and the fall in pulse and blood pressure. It appears to be as effective in prolonging life as any other measure, including blood and plasma transfusion.

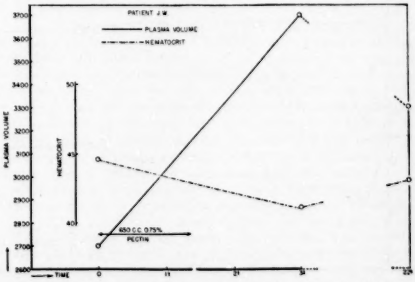

Chart 3 (patient J. W.).—Plasma volume (Evans blue method) and hematocrit readings after intravenous injection of sterile 0.75 per cent pectin solution. Smyth and Jacobson.

Experimentally produced traumatic shock, such as bile peritonitis, is so measured as to be a lethal procedure, but here too pectin solutions are as effective in prolonging life as other measures.

Plasmapheresis is a difficult procedure, always accompanied by a high mortality when the plasma proteins

5. Vielle, H., and de Saint-Rat, L.: Pectin and Its Hemostatic Effects, Bull. Acad. de méd., Paris **92**: 1097, 1924. Ziegelmayer, W.: The Chemical-Physical Basis of the Pectin Phenomenon of the Blood, Kolloid-Ztschr. **71**: 214, 1935. Dietrich, S., and Oettel, H.: Treatment of Hemorrhagic Diseases with Pectin, Deutsche med. Wchnschr. **65**: 1690 (Nov. 5) 1937. Ragni, Guglielmo: Blood Coagulation: I. Comparative Effects of Various Substances Which Accelerate Blood Coagulation, Boll. d. Soc. ital. di biol. sper. **13**: 23 (Jan.) 1938.

are reduced below 1 per cent, but it has been readily accomplished by Whipple [6] using saline solution with washed red cells, by Amberson [2] using gum-saline and washed red cells, as well as by many others. With pectin solutions there has been about 50 per cent mortality in our series, and 0.64 Gm. per hundred cubic

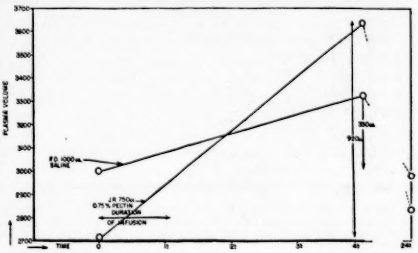

Chart 4.—Comparison of plasma volume changes following injection of pectin and saline solutions.

centimeters was the lowest plasma protein level obtained (dog 15). Even this animal died on the third day from hemorrhage in its wound.

INTRAVENOUS USE IN MAN

The 0.75 per cent pectin solution has been used exclusively in the prevention and treatment of shock, traumatic or surgical. In other words, it has been used strictly as a replacement fluid when blood or plasma transfusions would otherwise have been indicated.

For patients the size and speed of the infusions must be given careful consideration, and experience has shown that 5 to 10 cc. a minute can be maintained in the average patient without subjective symptoms. As with cold bank blood pectin solution may be given faster if the situation demands it; 1,600 cc. is the largest amount given continuously.

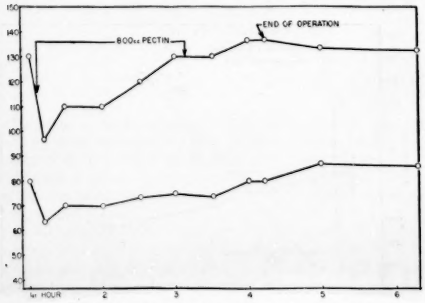

Chart 5 (patient B. B., aged 32).—Diagnosis, marginal jejunal ulcer; operation, release gastroenterostomy, partial gastrectomy; postoperative course uneventful.

If given slowly to normal individuals, the blood pressure, both systolic and diastolic, tends to increase. Plasma volumes in normal individuals are reported by Jacobson and Smyth,[7] who used the Evans blue dye method. These authors show not only that the pectin solution infused is retained in the circulation for from four to five hours but that an additional amount equivalent to 7 to 10 per cent of the original plasma volume may be drawn in from the tissues. After twenty-four hours 3 of 7 individuals still showed plasma volumes above the original of 13 per cent, 21 per cent and 27 per cent (charts 2 and 3). In contrast, saline infusions showed rapid loss of the saline from the circulation with plasma volume levels reaching near normal. This occurred despite the fact that the amounts of saline infused averaged 40 per cent higher than the amounts of pectin solution (chart 4).

Clinically more than 125 surgical patients have received pectin solutions. The distribution of these is represented in table 6. The need for infusion is suggested by the type of cases and the length of the

TABLE 6.—*Summary of One Hundred Clinical Cases*

Type of Case	
Gastrectomy—Total	2
Partial	22
Colon resection	30
Radical mastectomy	11
Traumatic shock	6
Neurosurgical procedures	4
Miscellaneous	25

TABLE 7.—*Summary of One Hundred Clinical Cases*

Length of Operation	
1 to 1½ hours	14.0
1½ to 2 hours	24.3
2 to 2½ hours	32.0
2½ to 3 hours	24.3
3+ hours	5.0
500 to 1,000 cc. of pectin solution used	

TABLE 8.—*Evaluation of Results in One Hundred Clinical Cases*

Good	68
Fair	27
Poor	5
No reactions or complications	

operative procedures (table 7). The response is shown in chart 5 and table 8. In some of the cases blood or plasma was given either before or after the pectin, and no signs of incompatibility were observed. The results indicated as good refer to a satisfactory response in blood pressure and general condition. A fair result indicates stabilization of blood pressure or a moderate increase, while the poor results obtained in 5 per cent indicate no increase or slight decrease in blood pressure, so that other measures were made necessary.

Very few patients in postoperative shock were seen, but those treated showed satisfactory improvement (chart 6).

Traumatic shock is unusual in our institution but the results in the limited number of patients treated with pectin are encouraging.

SUMMARY AND CONCLUSIONS

1. Pectin furnishes a readily available source for colloidal solutions which may be prepared economically.

6. Whipple, G. H.; Smith, H. P., and Belt, A. E.: Shock as a Manifestation of Tissue Injury Following Rapid Plasma Protein Depletion: The Stabilizing Value of Plasma Proteins, Am. J. Physiol. **52**: 72 (May) 1920.

7. Jacobson, S. D., and Smyth, C. J.: Plasma Volume Changes Following the Intravenous Injection of Pectin and Physiological Saline in Man, Proc. Soc. Exper. Biol. & Med. **50**: 218 (June) 1942.

2. The pectin molecule contains no protein and the solutions give few if any reactions if the method of preparation is correct.

3. Solutions prepared by multiple filtration and heating for fifteen to eighteen hours are preferred.

4. Good solutions should be water clear. They should have a viscosity of from 2 to 4 at 38 C. and osmotic

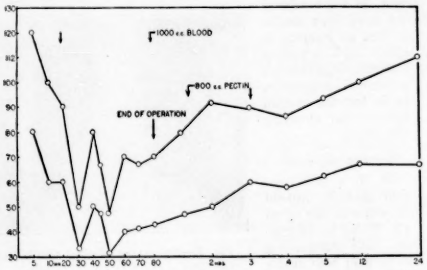

Chart 6 (patient M. M.).—Operation, radical mastectomy; surgical shock; duration, one hour forty minutes.

pressure from 45 to 70 mm. of mercury, depending on the percentage of pectin 0.75 to 1.5. The molecular weight may vary from 60,000 to 75,000.

5. In animals the solutions as described are well tolerated and are more efficient in replacing blood loss than electrolyte so'utions.

6. In human patients intravenous injection tends to increase both the systolic and diastolic blood pressure.

7. Blood volume is increased and well maintained by pectin solutions administered intravenously.

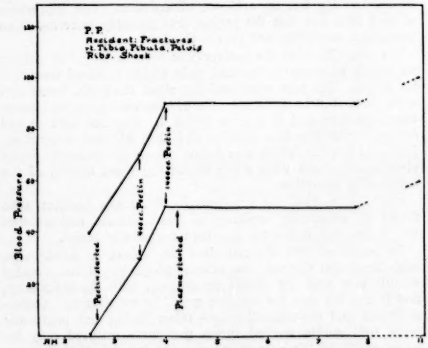

Chart 7.—Patient P. P. was struck by a hit and run driver and admitted to the emergency room at 2:30 a. m. on Jan. 1, 1943. Condition at that time was obviously critical. Patient was cold, pale and obviously deeply shocked. Blood pressure was almost unobtainable, being approximately 40/0. Pulse was thready and about 170 per minute. Pectin was started almost immediately after admission to the emergency room because plasma was not immediately obtainable. Arrow at A shows when administration of 1,000 cc. of pectin and 500 cc. of saline solution was completed. Examination showed fracture of the pelvis, compound fracture of the right tibia and fibula, distention of the bladder, severe laceration of the head and probable skull fracture. After about 400 cc. of pectin, condition was improved with blood pressure 70/30, pulse 120 per minute and stronger. Pectin 1,400 cc. was given with gradual improvement.

8. These solutions have been used in 125 clinical cases as a substitute for electrolyte solutions, blood and blood plasma in the prevention and treatment of shock with satisfactory results.

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ABSTRACT OF DISCUSSION

DR. VIRGIL H. MOON, Philadelphia: I have been following with interest the work of Dr. Hartman and his associates on pectin as a possible blood substitute in the treatment of shock. It has been stated by eminent physiologists that the usefulness of a fluid in the treatment of shock depends more on its physical than on its biologic properties. Therefore if one could find a fluid which has a viscosity approaching that of the blood plasma, a molecular weight not too far from that of plasma and particularly a colloidal osmotic pressure which is somewhere near that of the blood plasma and if that substance is not antigenic and produces no obnoxious effects, it would be an ideal substance for use as a blood substitute. It appears that pectin as prepared and used by the authors conforms to those specifications very closely. The fact that they have used it not only in experimental animals but in human beings in numerous instances with satisfactory results indicates that it may be a useful substitute for plasma or serum when the latter substances are not obtainable. Obviously, if plasma or serum is at hand, I think that even the authors would prefer to use it, because it replenishes the plasma proteins with the same type of protein which was lost. This property, of course, is lacking in a vegetable product such as pectin. Few of those who have written concerning shock realize that one major item in its dynamics is a disturbance of fluid balance. This results from injury or damage to the endothelial membrane. Many forces are concerned with the passage of fluid from the blood to the tissues and vice versa, but the operation of those forces is absolutely conditioned on the presence of a normal semipermeable endothelium between those two areas. Anything that damages endothelium renders it more permeable and interferes seriously with osmosis, which is a major factor governing the movement of fluid between the blood and the tissues. In shock there is a sharp disturbance of fluid balance, and an abnormal shift of fluid from the blood to the tissues occurs. In some of the cases reported by the authors there was a sustained increase in the blood volume. This indicated that fluid balance had been reestablished, at least in part. If this occurs regularly or frequently it would indicate that pectin solution may be useful in more than one way. Not only does it restore the fluid loss but it may tend also to restore fluid balance.

DR. HARRY J. CORPER, Denver: Some years ago we worked in our laboratories with pectin and were able to obtain a dry pectin preparation on the market, but it proved unsatisfactory. Dr. Hartman did not mention the type of pectin referred to or whether dry pectin would prove suitable for preparing desirable solutions.

DR. F. W. HARTMAN, Detroit: We have repeated the blood volume studies using Evans blue dye in dogs and have found evidence of definite differences in the reaction of the dog when Evans blue dye is used or when pectin is used in the presence of the Evans blue dye. We do not know why that is; however, it does seem that there is the possibility of a combination between this azo dye and the colloid of pectin. I think we had better sound a warning against the combination of pectin with a lot of other things, particularly with dyes and metals which may form a combination. We have used this material in 135 clinical cases alone and we have never seen any such manifestations and we have never seen any untoward reactions. I have been asked many times whether one could give this or that with pectin, and my answer has been that I do not know, but the three instances, that is, the combination with the azo, the combination with bismuth and the combination with arsenic, would indicate that if it is to be used it should be used alone and not in combination with these other substances. We are using the purest material which is recognized by the National Formulary and which is known technically by the name of pectinin. The specifications are very carefully worked out. In Dr. Moon's comments, I think his interpretation of the presentation was entirely correct. In none of these patients was there volume loss at the end of four hours. In fact, the average was 23 per cent above the beginning dose, the amount administered initially. If we should find that this material is somewhat more effective in supporting the blood volume and the blood pressure

than biologic products such as plasma or blood, I do not believe we would hesitate to use this in preference, because there is no incompatibility between this material and the blood or the plasma. In other words, one could give blood before or after administration without any evidence of reaction or incompatibility. In our institution we are using pectin routinely in all major surgical cases, the same way as we previously used blood or plasma during the operative period. As to the food value, this material is excreted as such, so there is no food value in it, but we have found that a biologic product, that is, a solution of amino acids, can be combined with this material safely and that the combination is well tolerated and that in animals, at least, it does rapidly build up the plasma protein; so that such a combination may be considered and, if proved satisfactory in human use, it may do practically everything that blood plasma will do.

Clinical Notes, Suggestions and New Instruments

A CASE OF CORONARY OCCLUSION FOLLOWED BY PREGNANCY WITH SUCCESSFUL TERMINATION

ORVILLE HORWITZ, M.D.; LOUIS B. LAPLACE, M.D.; NORMAN P. SHUMWAY, M.D., AND WILLIAM D. STROUD, M.D.
PHILADELPHIA

It has been thought and expounded in recent years not only that coronary occlusion occurs in younger people [1] but also that the prognosis, which at one time was regarded as invariably extremely grave by Heberden and his followers, may now be considered somewhat better. Cases have been reported recently of coronary disease occurring in younger people such as the case reported by Ravdin and Wood,[2] in which the coronary thrombosis was complicated by an embolus to the bifurcation of the aorta and which necessitated an embolectomy and resulted apparently in complete recovery, the patient now leading a more or less unrestricted life.

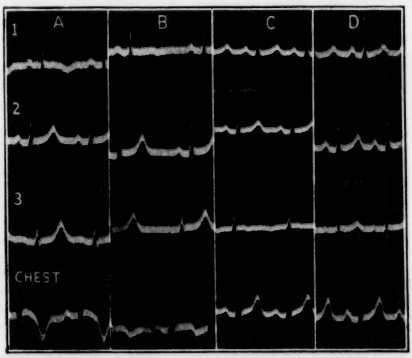

Fig. 1.—*A*, tracings taken Dec. 31, 1940. Rhythm normal. Rate 86. PR interval 0.17 second. No axis deviation. T_1 inverted. Chest lead: T wave deeply inverted. ST segment elevated slightly. QRS notched. In view of the history, this was considered typical of a recent anterior myocardial infarction. *B*, tracings of Jan. 15, 1941. Rhythm normal. Rate 75. PR interval 0.17 second. No axis deviation. T_1 diphasic. Chest lead: T wave diphasic. It was believed that there was considerable improvement since tracings of Dec. 31, 1940. *C*, tracings of Sept. 5, 1941. Rhythm normal. Rate 88. PR interval 0.18 second. Slight left axis deviation. T_3 low amplitude. Chest lead normal. This shows remarkable improvement of the record of Dec. 31, 1940. *D*, tracings of Aug. 5, 1942. Aside from the tachycardia of 108 and the mild degree of left axis deviation, these tracings are within the limits of normal.

Master, Dack and Jaffe [3] report that 202 patients who had acute coronary disease proved by electrocardiographic evidence all recovered, one third being able to live a life with either slight restrictions or none at all. Luten [4] also reports that patients who had their acute attacks as far back as 1925 have led useful lives with more or less unrestricted activity. However, in these reports we have been unable to find an instance in which such a patient was able to go through a normal pregnancy. It is for this reason that we are reporting this case.

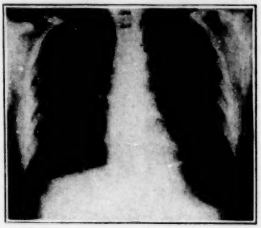

Fig. 2.—Appearance of chest about Aug. 10, 1942.

REPORT OF CASE

M. B., a white woman aged 35, entered the office of one of us (N. P. S.) in September 1940 complaining of pain in both ankles and swelling of the left leg. She stated that she had been suffering from sinusitis since 1937 and had had slight dyspnea on exertion. She had never been pregnant. In 1938 she had her appendix and right salpinx removed. The operation was complicated by phlebitis of the left leg.

The patient was thin, nervous and moderately well nourished but of rather poor musculature. The hands and feet were quite cold with mottling of the skin. There was slight tenderness over both maxillary sinuses. The tonsils had been removed. The heart was not enlarged and the sounds were normal. There was a soft apical systolic murmur which was thought to be of no pathologic significance. The blood pressure was 130 mm. of mercury systolic, 78 diastolic. There was slight edema of the left leg but no evidence of arthritis. The impression at that time was that the patient was probably suffering from vasomotor instability and psychasthenia.

On Dec. 29, 1940 the patient was seen at 11 p. m. during an attack of severe substernal pain which required morphine for relief. The pain continued for about thirty-six hours and then moderated in intensity. An electrocardiogram was taken two days later and is seen in figure 1. She was kept in bed for approximately two months and then allowed progressive increased activity, which was finally almost unrestricted. Serial electrocardiograms were taken which suggested healing of the myocardial infarction.

On Sept. 6, 1941 she was seen by Dr. Louis LaPlace, who found no convincing evidence of heart disease and assured the patient that her heart was then organically sound.

In December 1941 she consulted Dr. Robert A. Kimbrough, who found that she was two months pregnant. It was decided at this time that she should go through with the pregnancy, and it was felt that the outcome would be satisfactory. Orthodiagrams and electrocardiograms taken during her pregnancy were well within normal limits and were featured only by some degree of left axis deviation. On July 25, 1942 she was delivered by cesarean section of a healthy 6¾ pound (3,060 Gm.) boy by Dr. Kimbrough, two weeks after which another electrocardiogram and a teleoroentgenogram were taken. The latter was completely negative as may be seen in figure 2, and the electrocardiogram showed slight left axis deviation but was otherwise entirely within normal limits.

In some ways this case is similar to the case report by Barnes and Burchell [5] of acute pericarditis which simulates coronary disease from the point of view both of symptoms

1. Ferguson, A. S., and Lockwood, J. R.: New York State J. Med. **36:** 1618-1621 (Aug. 15) 1939. Goodson, W. H., Jr., and Willius, F. A.: Coronary Thrombosis Among Persons Less Than Forty, Minnesota Med. **22:** 291-293 (May) 1939.

2. Ravdin, I. S., and Wood, F. C.: Ann. Surg. **114:** 834-839 (Nov.) 1941.

3. Master, A. M.; Dack, Simon, and Jaffe, H. L.: New York State J. Med. **42:** 413-420 (March 1) 1942; Cardiac Efficiency and Prognosis Following Recovery from Acute Coronary Occlusion, J. A. M. A. **120:** 1271-1278 (Dec. 19) 1942.

4. Luten, Drew: Illinois M. J. **81:** 52-56 (Jan.) 1942.

5. Barnes, A. R., and Burchell, H. B.: Am. Heart J. **23:** 247-268 (Feb.) 1942.

and of the electrocardiogram. However, the changes in the chest lead of the tracings taken on Dec. 31, 1940 would tend to make the diagnosis of pericarditis unlikely.

SUMMARY

A 35 year old white woman was delivered of a normal child by cesarean section twenty months after having what was apparently an acute anterior myocardial infarction.

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SCIATIC NERVE INJURY DUE TO THE INTRAMUSCULAR INJECTION OF PARALDEHYDE

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Direct injury to peripheral nerve trunks by deep intramuscular injection of drugs has been reported by many observers. Oppenheim [1] in his Textbook of Nervous Diseases states that paralysis of the sciatic has been produced by the subcutaneous injections of ether, sublimate and antipyrine, and by the alcohol injections which were once used in the treatment of sciatica. Biggam [2] and Seshachalam [3] have found nerve damage due to quinine injection, and Gammel [4] reported a case of peroneal nerve palsy after bismuth injection in the treatment of syphilis. Recently Elkington [5] reported 2 cases of sciatic and one of radial nerve paralysis developing within a few days after deep injection of sodium sulfapyridine.

To my knowledge there has not been any reported case of injury to the sciatic nerve by paraldehyde. It is my purpose in this report to record 3 cases occurring within a brief period of time in which damage to this nerve followed the intragluteal injection of paraldehyde.

Cervello is reported by Goodman and Gilman [6] to have first used paraldehyde in 1882. It soon became recognized as a drug of low toxicity permitting a wide range of safety. The intravenous route of administration was initiated in 1912 by Noel and Souttar.[7] In 1934 Johnson [8] reported 20 cases in which the intramuscular route was used with impunity. During recent years the latter method has been widely adopted, although occasional tissue necrosis may develop.

REPORT OF CASES

The following 3 cases were referred to the Neurological Service of the Boston City Hospital on account of symptoms referable to the sciatic nerve:

CASE 1.—M. T., a man aged 34, a factory inspector, had an acute illness characterized by sore throat, headache, chills, malaise, vomiting, delirium and, finally, coma. On examination the patient was comatose. The neck was rigid; Kernig and Brudzinski signs were present. The deep tendon reflexes were hyperactive and the plantar responses were of the extensor type. There was a maculopapular rash over the trunk and extremities, and a few moist rales were heard in the right lung base.

There was a leukocytosis of 22,100 cells, with 88 per cent polymorphonuclear leukocytes. Urinalysis was normal except for the presence of occasional pus cells. The spinal fluid was turbid, was under a pressure of 340 mm. of water, and contained 30,000 leukocytes (100 per cent polymorphonuclear) and gram-negative diplococci. Chemical examination revealed protein 366 mg., sugar 7 mg. and chloride 629 mg. The blood and spinal fluid Hinton reactions were negative.

A diagnosis of meningococcic meningitis was made and treatment with sulfathiazole and sulfadiazine, orally, was instituted. A total of 5 Gm. of sulfathiazole and 90 Gm. of sulfadiazine was received by the patient during the ensuing fourteen days. After four days the patient became conscious but was excited and behaved in an irrational manner. During the next few days several injections of paraldehyde were administered intragluteally, practically all into the right buttock. On the eighth day after commencement of treatment the patient was allowed up in a chair and at that time he complained of weakness of the right leg and intense pain in the posterior aspect of the right thigh.

He was referred to the Neurological Service on the fifteenth day. On examination at that time there was considerable weakness and atrophy of the right thigh and leg. All movements of the thigh, leg and foot were weak, although no single movement was completely lost. A partial foot drop was present. The right achilles reflex was diminished. The patellar reflexes were equal and the plantar responses were flexor. Straight leg raising and pressure along the course of the right sciatic nerve produced severe pain. Sensation of numbness was felt along the lateral surface of the foot and little toe. Appreciation of touch, pain and temperature was decreased on the posterior aspect of the calf and ankle. A small oval area of anesthesia and analgesia was found on the upper part of the calf and another such area on the buttock. The posterior surface of the thigh was decidedly hyperesthetic and hyperalgesic, the lighest touch causing intense pain. Position and vibratory sensations were not affected.

The spinal fluid, which was examined on the nineteenth day, was under a pressure of 90 mm. of water and contained 11 cells and 20 mg. of protein.

Treatment of the affected limb with rest, diathermy and the heat cradle was instituted. The hyperesthetic area slowly decreased in size but did not entirely disappear. The right achilles reflex was eventually lost. The patient became more comfortable but on the day of discharge, forty-eight days after symptoms referable to the leg developed, there remained pronounced wasting and weakness of the leg and only slight return of sensation.

CASE 2.—F. J., a man aged 42, a mail carrier, developed hematemesis following prolonged ingestion of alcohol. On admission to the hospital the patient was intoxicated, with apprehensive facies and gross tremors of the extremities. There was a patch of old choroiditis in the right optic fundus. The tongue was smooth and red and the teeth were carious. The heart and lungs were normal, and slight tenderness was present in the epigastrium. Blood and urine studies were normal and the blood Hinton reaction was negative.

Owing to his extreme restlessness the patient was given paraldehyde rectally. When this proved ineffectual, he was given 20 cc. of the drug into the lower half of the left buttock. Immediately a sharp pain shot down the posterolateral aspect of the left leg to the dorsum of the foot. Within two minutes the dorsum of the foot became blue and swollen and numbness enveloped the thigh and leg. Sleep occurred shortly afterward.

On the following morning the patient was referred to the Neurological Service. At that time he complained of throbbing in the great toe and numbness from the midthigh to the foot. The left foot was discolored, edematous and tender on the dorsal surface. The site of needle puncture was evident in the lower half of the left buttock near the midline. All movements of the left foot were impaired, and foot drop was nearly complete. Movements at the hip and knee were not weakened. The patellar reflexes were equal, but the left achilles reflex was absent. The plantar responses were flexor. On palpation the left foot felt warmer than the right and the left calf was tender to compression and the muscles were lacking in tone. Pain, temperature and tactile appreciation were lost in a well defined area covering most of the dorsum of the foot and the posterolateral surface of the leg. The border of this area and part of the dorsum of the foot were hyperalgesic. A

From the Department of Neurology, Harvard Medical School, and the Neurological Unit, Boston City Hospital.

1. Oppenheim, Hermann: Textbook of Nervous Diseases for Physicians and Students, authorized translation by Alexander Bruce, ed. 5, Edinburgh, Otto Schulze & Co., 1911, vol. 1, p. 462.
2. Biggam, A. G.: Damage to the Sciatic Nerve from Intramuscular Administration of Quinine, Brit. M. J. **1**: 1171 (June 28) 1930.
3. Seshachalam, T.: Musculospiral Nerve Paralysis Following Intramuscular Injection of Quinine, Indian M. Gaz. **64**: 86 (Feb.) 1929.
4. Gammel, J. A.: Local Accidents Following Intramuscular Administration of Salts of Heavy Metals: Report of Two Cases of Embolia Cutis Medicamentosa, Arch. Dermat. & Syph. **18**: 210 (Aug.) 1928.
5. Elkington, J. St. C.: Peripheral Nerve Palsies Following Intramuscular Injections of Sulfonamides, Lancet **2**: 425 (Oct. 10) 1942.
6. Goodman, Louis, and Gilman, Alfred: The Pharmacological Basis of Therapeutics, New York, Macmillan Company, 1941, p. 178.
7. Noel, H. L. C., and Souttar, H. S.: The Intravenous Injection of Paraldehyde, Lancet **2**: 818, 1912.
8. Johnson, A. S.: The Parenteral Use of Paraldehyde for Control of Pain and Convulsive States, New England J. Med. **210**: 1065 (May 17) 1934.

less definite area of hyperalgesia extended up over the popliteal space and posterior surface of the thigh. Position sense was lost in the left foot, and vibration sense was diminished below the knee. Stimulation with the faradic current produced no response in the extensors of the foot and a weak response in the extensors of the toes. A sweat test brought no response on the dorsum of the foot. Permission to examine the cerebrospinal fluid was refused.

During his stay in the hospital the patient complained of sharp stabbing pains in the calf, foot and toes, often without stimulus. The swelling of the foot eventually subsided. Treatment of the involved extremity consisted of physical therapy and the application of a foot brace. On discharge from the hospital on the thirty-first day, the patient was more comfortable but there was little or no improvement in muscular strength or in the sensory defect.

CASE 3.—P. P., a man aged 42, a seaman, was treated for intoxication resulting from excessive alcohol ingestion of three weeks' duration. On examination, in addition to the signs of intoxication there were gross tremors of the tongue and extremities and a chronic purulent otitis media on the left side. The heart, lungs and abdomen were normal. Reflexes were normally active. Laboratory studies of the blood and urine were normal.

On account of restlessness the patient was given 12 cc. of paraldehyde into the upper outer quadrant of the right buttock. No immediate symptoms were experienced. On the following morning he complained of numbness of the entire right leg from the buttock and groin to the sole of the foot, the sensation being most pronounced along the posterior aspect. No pain was felt in the leg. The patient stated that the foot and ankle were weak.

When he was referred to the Neurological Service on the third day there was weakness of all movements of the right foot, especially dorsiflexion, and slight weakness in flexion of the leg at the knee. The right achilles reflex was absent. Patellar reflexes were equal and the plantar responses were flexor. A large oval area of anesthesia and analgesia was found over the posterior aspect of the right thigh and lower part of the buttock. A similar area of sensory loss, less sharply defined, was present over the heel, toes and medial surface of the foot. Position and vibratory sensations were preserved. The point of the needle entry was not visible. The spinal fluid was entirely normal.

The patient left the hospital on the fifth day. He declared that the sensation and strength were improved in the affected limb, but no change was evident on objective examination.

COMMENT

In case 2 the immediate development of symptoms suggests that the drug was injected directly into the nerve sheath. It was apparent that the injection was made too near the gluteal fold and that an unusually large quantity of paraldehyde was introduced. In case 1 it was impossible to determine whether one or several injections led to the nerve palsy, since multiple injections were given, all into the same general region. In the third case 12 cc. of the drug was supposedly given into the upper outer quadrant of the buttock, the accepted site for intramuscular injections. It is assumed that the course of the needle was misdirected after the skin was pierced or that the paraldehyde was later displaced toward the sciatic nerve.

In 2 of the cases pain and weakness were the outstanding symptoms and in 1 numbness and weakness occurred. In all 3 cases there was little evidence of recovery after varying periods of time.

The question may naturally arise as to whether the symptoms should be attributed to some other factor than paraldehyde. In case 1 the possibility that the nerve injury was a complication of meningitis or due to the toxic influence of the sulfonamide drugs has to be considered. In the other 2 cases hospitalization was due to chronic alcoholism, a condition often associated with peripheral nerve involvement. However, the isolated nature of the paralysis and its development in each case within a brief interval after injection of paraldehyde into the region of the sciatic nerve trunk indicate a direct causal relationship.

SUMMARY AND CONCLUSIONS

Injury to peripheral nerves has followed the intramuscular injection of various substances into or near the nerve trunks. Among the irritants previously reported are bismuth, ether, alcohol, quinine, antipyrine and sodium sulfapyridine. To this group are added 3 cases of sciatic nerve injury following the intragluteal injection of paraldehyde.

Paraldehyde is an irritant, and its parenteral use may cause injury to nerves with which it comes into contact. The increasing use of this method of administration may be expected to lead to additional mishaps such as those herein reported unless particular care is taken. The oral or rectal route should be used in preference to the intramuscular. When the latter method becomes necessary the drug should be injected at a safe distance from important nerve trunks, and not more than 5 cc. should be given in one injection.

ACNE CONGLOBATA AND PERIANAL PYODERMA (HIDRADENITIS SUPPURATIVA)

PROMPT RESPONSE TO LOW FAT DIET AND THYROXINE THERAPY

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KANSAS CITY, MO.

Acne conglobata is a chronic inflammatory disease of the skin which is characterized[1] "by the presence of the constituents of acne vulgaris, such as comedones, papules and pustules, and in addition large, elevated, fluctuating plaques which are dusky blue and frequently form cutaneous or subcutaneous abscesses and oil cysts, which may perforate and form discharging sinuses, healing very slowly and often leaving keloidal or so-called bridge scars (brückennarben) of Lang. The lesions closely resemble tuberculodermas of the colliquative type (scrofuloderma)." Ormsby[2] credited Reitman with the first description of the disease, in 1908, occurring in 4 men who had "innumerable comedones, many double comedones and comedo scars together with follicular and perifollicular inflammatory infiltrations, often confluent, some of which had softened and were open. . . . Pautrier described a case in which torpid abscesses, keloid fibrous bridges and other hyperplastic fibrous formations occurred in the early stages in the usual acne areas. Later indolent abscesses developed on the hips and buttocks and these were followed with lesions resembling bromoderma or blastomycosis on the arms, forearms and thighs. . . ."

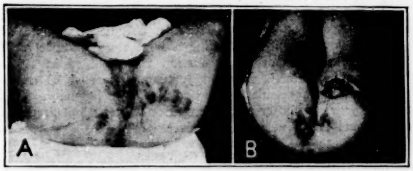

Fig. 1.—*A*, buttocks and perianal region before operation; *B*, showing sluggish wounds one week after operation.

The chronicity of this rare form of severe acne and its rebelliousness to treatment are well known to dermatologists.

Proctologists see cases such as those described by Highman[3] in which the perineum and buttocks are riddled with abscesses. One of us (M. M. M.) has in the past seven years undertaken to manage the disease severely affecting the buttocks of 10 Negro women aged 25 to 50. Each suffered from hypoglandular defects as evidenced by obesity and seborrhea as well as ordinary acne affecting other parts of the body. Their "perianal pyoderma" was treated with surgery, heliotherapy and vaccines without success. Postoperative healing was exceedingly slow and ended with keloidal scars. Smith[3a] described 6 cases of perianal pyoderma of the type here considered. Relationship of

1. Michelson, H. E., and Allen, P. K.: Acne Conglobata, Arch. Dermat. & Syph. **23**: 49-64 (Jan.) 1931.
2. Ormsby, O. S.: Diseases of the Skin, ed. 5, Philadelphia, Lea & Febiger, 1937, p. 1184.
3. Highman, W. J., in discussion on Michelson and Allen.[1]
3 a. Smith, N. D.: Pyodermia Simulating Extensive Anal Fistula, Tr. Am. Proctol. Soc. **39**: 163-176 (June) 1938.

this to hidradenitis suppurativa,[3b] a disease which affects mainly the axillas as a rule, was recognized by Jackman.[3c] The acneic nature of one type of hidradenitis, the type not due simply to staphylococcic parasitism of axillary sweat glands, was postulated by one of us (R. L. S. Jr.).[3d] The groin location of lesions of hidradenitis suppurativa was depicted by Brunsting [3e] in a case which we would class with the acneic type and which resembled the case we report. We believe such cases not to be of pyogenic bacterial etiology. We consider them, and perianal pyoderma and acne conglobata, all to be variants of acne.

Pain in the sitting position was the complaint of our patient, whose acne conglobata had existed for thirteen years. On July 6, 1942 he underwent an operation for the drainage of sinus tracts about the anus. The resulting wounds were painful, sluggish and unresponsive to treatment. A few days later his cutaneous lesions were recognized as acne conglobata, and he was put on the treatment one of us [4] devised and routinely uses in the management of acne vulgaris, a treatment based on the hypothesis that the lesions of acne are inflammatory within a few weeks until they themselves have tried this method of treatment in cases in which they have not been able to afford much relief over a period of years. We hope too that proctologists may be enabled to manage successfully cases which have puzzled and disappointed them in the past.

REPORT OF CASE

G. W., a white man aged 32, an electrician, complained of pain in the sitting position, perianal abscesses, sores on the skin and weariness. Since 1929 his acneform troubles had been severe and marked by the development, healing and recrudescence of symmetrically located plaques of boggy, painful, sinus riddled dermatitis from which oozed thin malodorous pus and which in healing left keloid-like, irregular, rough, cribriform and atrophic scars. Lesions were located on the back of the neck, over the scapulas, over the sternum, about the buttocks and perianal region, in the groins and on the forearms. While the patient was seldom completely incapacitated, he was continually in pain, forced to wear dressings and often obliged

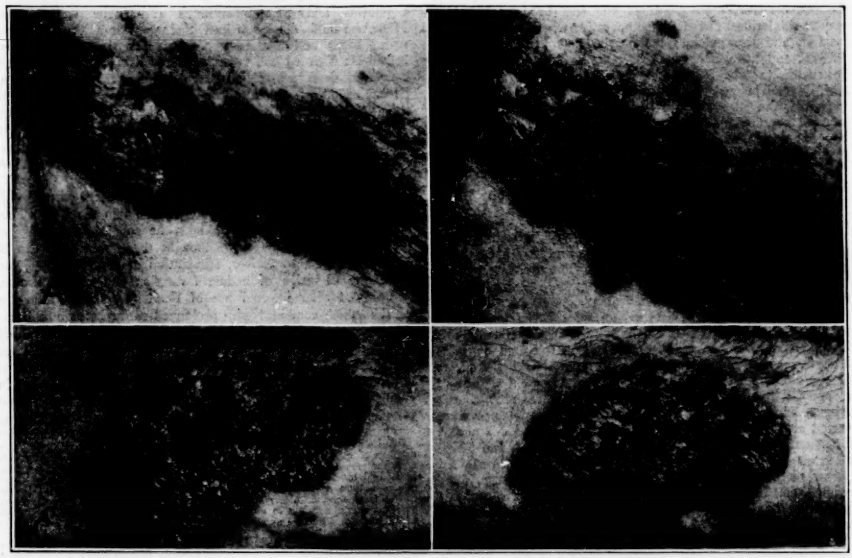

Fig. 2.—*A*, left inguinal lesion before treatment, showing edema and comedones; *B*, left inguinal lesion after seven weeks of treatment with low fat diet and thyroid, showing healthy scars and absence of edema and comedones; *C*, left forearm lesion before treatment, showing edema and comedones; *D*, left forearm lesion after seven weeks of treatment, showing healthy scars and absence of edema and comedones.

foreign body reactions to lipid. On a low fat diet and thyroid medication the wounds began promptly to heal, losing their painfulness. By August 31, only seven weeks later, he was completely relieved of all symptoms in all parts of the body; only scars remained. He stated that he "did not know it was possible to feel so good."

We report our case in the expectation that dermatologists will be skeptical of our claim to have cured acne conglobata to undergo procedures of incision and drainage, the wounds from which granulated tediously and generally broke down after apparent healing. He had despaired of ever feeling better.

The patient had previously sought medical care in a number of cities. In particular from 1938 to 1941 he regularly attended a clinic in New Orleans, where investigations were intensively pursued during six weeks of hospitalization in 1941. Such local, vaccinal and roentgen therapeutic efforts as were tried failed. Tuberculosis was not demonstrated.

The feature of weariness was noteworthy throughout the past nine years. No amount of sleep provided a sense of satiety with rest. The patient for many years drank 3 quarts or more of milk a day, hoping thereby to improve his condition. Much of the time he had a low grade fever, probably because of secondary infection and absorption of purulent material.

When we saw him, both buttocks were scarred. The skin and subcutaneous tissues of that region supported linear indurations, thick, bluish and pierced in many places by openings from which rancid pus and caseous matter could be expressed

3 b. Brunsting, H. A.: Hidradenitis Suppurativa: Abscess of the Apocrine Sweat Glands; a Study of the Clinical and Pathologic Features, with a Report of 22 Cases and a Review of the Literature, Arch. Dermat. & Syph. **39**: 108-120 (Jan.) 1939.

3 c. Jackman, R. J.: Hidradenitis Suppurativa: Diagnosis and Treatment of Its Perianal Manifestations, Am. J. Digest. Dis. **9**: 220-222 (July) 1942.

3 d. Sutton, R. L., and Sutton, R. L., Jr.: Diseases of the Skin, ed. 10, St. Louis, C. V. Mosby Company, 1939, Hidradenitis Suppurativa.

3 e. Brunsting, L. A.: Pyogenic Infections of the Skin, Especially Hydradenitis Suppurativa, J. Michigan M. Soc. **42**: 185-190 (March) 1943, fig. 3.

4. Sutton, R. L., Jr.: Acne Vulgaris a Pustular Lipoidosis: Successful Treatment Based on Control of Lipoid Metabolism by Low Fat Diet and Thyroid Extract, South. M. J. **34**: 1071-1082 (Oct.) 1941.

(fig. 1 *A*). There was no fistulous connection with the anal canal. At operation on July 6, 1942 the sinus riddled inflammatory tissue about the anus was excised or widely opened. Pain and reluctance to heal featured the first postoperative week (fig. 1 *B*).

We directed him on July 11 to follow a low fat diet, without limit as to caloric content, and to take thyroid U. S. P. in a dose of one 1 grain (0.065 Gm.) tablet twice a day with breakfast and supper. He was instructed to record daily his basal temperature,[5] the temperature in the morning before arising from bed. This is a guide on which we have learned to rely after having tested it, in comparison with basal metabolic rate determinations, as a criterion of thyroid function, at the suggestion of Dr. Broda Barnes. On July 14, after taking 2 grains (0.13 Gm.) of thyroid U. S. P. a day for three days, his basal temperature was 97.8 F., the weight was 148 pounds (67 Kg.), and little change was as yet observable in his condition. Photographs (fig. 2 *A* and *C*) were taken which show the edematous state of the boggy lesions and many comedones in the irregular interstices of their corded surfaces. On July 17 he felt brighter, more vigorous and less tired by his day's work; the lesions, including the operative wounds, were drying, healing and less painful; the basal temperature remained at 97.8 F. and the weight was 149 pounds (67.6 Kg.). He was instructed to take 3 grains (0.2 Gm.) of thyroid each day. On July 20 he weighed 150 pounds (68 Kg.), the basal temperature was 98 F., and he had mild irritable symptoms of thyroid overdosage. He was ordered to omit the next two 1 grain doses and then to continue on 2 grains a day. The lesions showed continuation of their tendency to heal and their soreness was leaving. The patient made an unexpected trip out of town and forgot to carry his thyroid tablets with him. After a week without thyroid medication he felt so bad and the lesions were so apparently getting worse that he prevailed on a village druggist to give him thyroid tablets without a prescription for them. He then took 2 grains a day until his return to Kansas City on August 10. The operative wounds were now completely healed. He weighed 150 pounds and his cutaneous lesions were almost free from discharge, but the basal temperature had dropped to 96.8 F. He was ordered to take 3 grains a day, although three weeks previously this had been an overdose. Now, however, he tolerated 3 grains a day and, in fact, was by this time so familiar with the effects of thyroid and with our intention of raising his temperature to normal that he increased the dose of his own accord. On August 22 he telephoned the report that his basal temperature stayed at 98 F. on a dosage of 3½ grains (0.22 Gm.) a day. On August 31 his weight was 152 pounds (69 Kg.), and thereafter on 4 grains (0.26 Gm.) a day his temperature remained normal at 98 F. By August 31 every lesion was dry, firm, painless and free from edematous inflammation, and comedones had dropped away, as seen in photographs (fig. 2 *B* and *D*) taken on that date. He was working fourteen hours a day, sleeping soundly and awaking refreshed. There was no symptom of thyroid overdosage. Objective evidence of his declared sense of well-being was apparent. He had gained 4 pounds (1,814 Gm.) in seven weeks while taking thyroid. When last seen, in February 1943, his condition had remained excellent and his thyroid dose continued to be 3 grains (0.2 Gm.) a day.

COMMENT

To dermatologists, the only physicians who as a class are familiar with acne conglobata, such a case record of definitive response to apparently specific therapy is astonishing. To proctologists, familiar with perianal pyoderma, the same is true. In fifty days a man with an illness of ten years' duration was relieved of all manifestations saving scars and felt a sense of well-being such as he had never known. Improvement was observable within two weeks of the start of his regimen. If he had not been away from control for three weeks, we believe that the fifty days would have been reduced to perhaps thirty-five.

We believe that such results can be repeated in every case of acne conglobata. The necessary conditions are, we think, the maintenance of (1) a truly low fat diet[6] which does not entail curtailment of any nutritional necessity[7] and (2) a dose of thyroid which is the maximum amount tolerated without any symptom of overdosage. The basal temperature[8] was a valuable criterion of the proper dosage in this case, as we find it also in the treatment of acne vulgaris.

As to the patient's intolerance of 3 grains of thyroid a day nine days after treatment was started, followed by tolerance of 4 grains a day five weeks later, we think that early in his course he was febrile from absorption of exudate which was then still profuse, whereas later the basal temperature fell below 97 F. because the lesions had almost healed, so that no absorption occurred. Then the larger dose of thyroid was tolerated and necessary.

Looking briefly at the literature on acne conglobata, one finds Wise[8] saying "The actual etiologic factor is unknown; however, the fact remains that the condition occurs in a person with a seborrheic skin, which in this instance constitutes a soil particularly susceptible to the formation of abscesses and scars." Fraser[9] spoke of "the special predisposition." Crutchfield[10] observed that even in large abscesses one finds no organisms and that tuberculosis cannot be demonstrated. Michelson and Allen[1] helped their patient with cleanliness, sulfur baths and a vaccine given intravenously. Highman[3] helped his with a blood transfusion and liver extract. Belote[11] concluded that "tuberculosis as a specific etiologic factor can be excluded. . . . The condition apparently is not caused by a specific organism. The etiologic factor of importance apparently is the patient himself and involves a constitutional predisposition." In experiments on 2 patients with acne conglobata, Belote inoculated 1 with pus from the other and so provoked a "fairly typical lesion." We interpret this as a successful transference of oily matter which acted as a foreign body[4] in the second patient, just as it did in the first. Pautrier[12] "believes the etiology must be sought in a study of the terrain. . . ." Gent[13] thought that "no results can be expected from autovaccines, stimulation or fever therapy; but immediate cessation of nodule formation and of suppuration is observed after internal use of Fowler's solution, after the usual method, combined with prolonged sulfur baths and external application of liquor calcii sulfurati, which must be rubbed into the skin with a handbrush." We should not have tried the handbrush on our patient without a general anesthetic.

We believe that the peculiarity of the terrain lies in conditions conducive to hypothyroidism and improper lipid metabolism. Our patient was managed with striking success

5. Barnes, Broda: Basal Temperature versus Basal Metabolism, J. A. M. A. **119:** 1072-1074 (Aug. 1) 1942.

6. Sutton, R. L., and Sutton, R. L., Jr.: Diseases of the Skin, ed. 10, St. Louis, C. V. Mosby Company, 1939, reprinted 1942, p. 448.

7. Low fat diet instructions: The living body requires a certain number of calories. If the food eaten does not contain the requirement, then the remainder is obtained by using up the body store of fat, and the individual loses weight by burning oil. Therefore, when one loses weight one is not on a low fat diet. So if one faces the alternative of either eating fatty food or else going hungry one should eat. In general, foods of plant origin are low in oil content and foods of animal origin are high in oil content. There is no limit on quantity of food eaten.

Avoid These Fatty Foods:	Eat These Nonfatty Foods:
Milk—none to drink	Cereals (hot or cold), wheat, bread
Cream	Fruits (apple, pear, banana and others)
Butter	
Ice cream—none	Vegetables (potato, rice, tapioca, corn, hominy, all kinds of beans, peas, cauliflower, cabbage, turnip, lettuce, celery, onion, cucumber, pickle and others)
Cheese (cottage cheese is all right)	
Pork, ham, bacon, sausage	
Wiener	
Gravy	
Fried foods	Sugar, jam, jelly, honey, syrup, sugar candy (stick candy, gumdrops, jelly beans, caramel, taffy, divinity)
Nuts, peanut butter	
Chocolate, cocoa	
Vegetable oils (crisco, corn oil, olive oil, margarine)	Lean meats (beef, veal, chicken) all sea foods, all game fishes, frog's legs, gelatin, white of egg, visceral organs such as liver, kidney, sweetbread
	Salt, pepper, spices
	Beverages, except milk, chocolate, alcohol, tomato juice, grape juice

Avoid also certain rich sources of the lipid, provitamin A-like substances: tomato juice, catsup, chili, cod liver oil and vitamin concentrates, spinach, carrot, sweet potato, and yolk of egg.

8. Wise, Fred, in discussion on Michelson and Allen.[1]

9. Fraser, J. F., in discussoin on Michelson and Allen.[1]

10. Crutchfield, E. D., in discussion on Michelson and Allen.[1]

11. Belote, G. H.: Acne Conglobata: An Experimental Study, Arch. Dermat. & Syph. **27:** 302-309 (Feb.) 1933.

12. Pautrier, L. M.: Ann. de dermat. et syph. **5:** 233 (March) 1934, abstr. in Wise, Fred, and Sulzberger, M. B.: Year Book of Dermatology and Syphilology, Chicago, Year Book Publishers, 1934, p. 192.

13. Gent, W.: Dermat. Wchnschr. **111:** 963 (Nov. 9) 1940, abstr. in Wise, Fred, and Sulzberger, M. B.: Year Book of Dermatology and Syphilology, Chicago, Year Book Publishers, 1941, p. 211.

without regard to cleanliness or local applications. His major dietary change by our order was the elimination of milk, 50 to 60 per cent of the caloric value of which comes from fat.

SUMMARY

A patient with acne conglobata and perianal pyoderma of many years' duration responded, with strikingly prompt and satisfactory results, to treatment with a low fat diet and thyroid given to tolerance. Acne conglobata, perianal pyoderma and hidradenitis suppurativa of the acneic type comprise various manifestations of one disease, acne, which is fundamentally a disease of lipid metabolism.

31 East Sixty-Second Street.

Special Article

THE STANDARDIZATION OF ELECTROCARDIOGRAPHIC NOMENCLATURE

REPORT OF COMMITTEE OF THE AMERICAN HEART ASSOCIATION

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It is nearly half a century since Einthoven first employed the letters P, Q, R, S and T to designate the component deflections of the curves which he obtained by computing and eliminating the distortion present in records of the normal heart beat taken with the capillary electrometer. After he had invented the string galvanometer and was able to record the human electrocardiogram in undistorted form he continued to use these symbols and eventually added to their number by assigning the letter U to the low voltage deflection often present in early diastole and by accepting the designation T_a, previously employed by Hering, for the inconspicuous final component of the auricular complex.

This system of nomenclature has been in practically universal use since the very beginning, and it is permanently embedded in a vast and important literature, which all serious students of electrocardiography must frequently consult. In spite of the tremendous growth of this science in the recent past, it has continued to serve its purpose more than reasonably well. Some have found it unsatisfactory in certain respects and have tried to replace it with an entirely different terminology, but such efforts have met with no success and are now of interest chiefly from the historical standpoint. Under these circumstances it seems essential that, in attempting to standardize electrocardiographic nomenclature, we respect usages that are long standing and generally accepted and make only such recommendations as may be required to meet urgent needs of the present and immediate future. It is desired that all concerned clearly understand the causes of dissatisfaction which have led to a demand for some action of this sort.

Much of this dissatisfaction is clearly dependent on the circumstance that electrocardiographic nomenclature, like any other language, is continuously changing. It must grow and expand with the science which it serves and can be stabilized only temporarily. With the advance of knowledge the terms and symbols introduced by our predecessors have been utilized to meet new needs and have acquired meanings which they did not originally possess and which are not exactly the same for all workers. We propose to redefine those terms that are in general use, so that misunderstanding may be avoided. The introduction or recommendation of new terms which have not been widely adopted in response to an imperative need would be more confusing than helpful.

It was primarily to facilitate the description and discussion of the form of the electrocardiogram that Einthoven first assigned letters to its individual components. It is important that this function of our nomenclature should be kept in mind. The deflections to which he gave names differed one from another in various ways: in size, in direction, in shape, in duration, in sequential position and in their relations to other events in the cardiac cycle. All the components originally named were no doubt regarded as fundamentally different in origin. It should be emphasized that neither the observed differences nor the differences in origin inferred can be considered all of the same sort or all equally significant.

It is clearly desirable that deflections alike in origin always be given the same name and that deflections unlike in origin bear different names. Both Einthoven and Lewis after him recognized the validity and importance of this principle. The former went considerably further than the latter in his efforts to avoid violating it, and his writings suggest that it was chiefly for this reason that he never solved to his own complete satisfaction the problem of adapting his nomenclature to electrocardiograms of unusual or abnormal outline. The difficulty seems to have been that he did not fully realize that the symbols he was using differed greatly in value: that the phenomena which they represented were by no means equal in rank.

When dealing with initial ventricular deflections conspicuously different from those to which the letters Q, R and S were first assigned, he usually did not attempt to name them individually but made use of the symbol QRS to designate this group of deflections as a whole. This solution of the problem surrendered the advantages which he had gained originally by naming the components of the QRS complex.

In the case of bundle branch block of the common type he went further still and often labeled the first large deflection of the essentially diphasic ventricular complex *A* and the large final deflection *B*. For a similar reason Lewis assigned the symbols Q′, R′, S′ and T′ to the components of electrocardiograms of this kind. Few authors have followed Einthoven and Lewis in giving distinctive names to the ventricular deflections of branch block curves. According to our present conceptions the final ventricular deflection always represents the same physiochemical process. By always calling it the T wave we emphasize this important truth. By giving it one name when normal and a variety of others when abnormal we should obscure a likeness which is fundamental for the sake of making distinctions which are, by comparison, trivial. These remarks apply with equal force to the problem presented by normal and abnormal QRS complexes.

In cases of pronounced axis deviation, Einthoven used the letter R to designate the chief QRS deflection regardless of whether it was upward or downward. Lewis, on the other hand, called this deflection R when it was upward and S when it was downward and the vast majority of recent writers have done likewise. From time to time, however, attempts have been made to revive Einthoven's point of view.

In the last few years differences of opinion have arisen as to what constitutes a Q deflection and what an S deflection. When the QRS complex consists of

a single downward deflection, some writers call this deflection S on the ground that a downward deflection should not be labeled Q unless it is followed by an upward deflection. Others call it Q on the ground that this name should be given to every downward deflection not preceded by an upward deflection.

By far the greater part of the dissatisfaction with our electrocardiographic nomenclature has clearly been due to a lack of agreement as to what principles should govern the assignment of the letters Q, R and S to the components of the QRS complex. The symbols P, T_a, QRS, T and U have long been used in the same way by every one and present no difficulties. The electrocardiographic components which they represent may be regarded as at least approximately equal in rank. Each has a characteristic contour and a distinctive relation to other events of the cardiac cycle. According to our present conceptions each has a distinctive origin. The first (P) is held to represent all those electrical forces produced by depolarization (activation) of the auricular muscle; the second (T_a), all those electrical forces produced by repolarization of the auricular muscle. The third (QRS) and fourth (T) are held to represent all the electrical forces generated when these same physiochemical changes take place in the ventricular myocardium. The last (U) is less well understood; it apparently depends on some sort of readjustment of the polarization of the ventricular muscle. Since these physiochemical changes are closely related to the mechanical activities of the heart and necessarily occur whenever the heart beats, their electrical representatives can never be actually absent in any lead. Some may, however, be isoelectric or of such low voltage that they are imperceptible, and it often happens that a small deflection is difficult or impossible to detect because it is superimposed on a much larger one. Whatever the standpoint adopted, each of these components of the electrocardiogram is clearly entitled to a distinctive name. It is obvious that there is little danger of mistaking one of them for any of the others.

The individual components of the QRS complex are not entities of the same sort. They vary in number from subject to subject and from lead to lead. They have not been related to different events of the cardiac cycle, nor have they been shown to depend on the activities of distinct subdivisions of the ventricular muscle. No one of them has a distinctive contour. They differ one from another chiefly in direction and in sequential position and cannot be easily defined except in terms of these differences. All these deflections are alike in origin in the sense that all are produced by electrical forces generated by the spread of the excitatory process over the ventricular muscle. They can differ in origin only as regards the particular fraction of these forces which each represents. The individual fibers which contribute the elementary forces responsible for a given component in a given lead do not all lie in the same part of the ventricular myocardium. No one of the QRS components in any lead has a simple anatomic basis of this kind which would make its origin distinctive in the anatomic sense. The origin ascribed to any component is, mainly for this reason, dependent to a large extent on the point of view adopted, and no one particular point of view has gained such wide acceptance as to make it preeminent.

It has been suggested that the QRS interval should be subdivided in one way or another and that names should be assigned to parts of the QRS complex solely on the basis of the particular subdivision of this interval within which they fall, rather than to the separate deflections of which it is composed. This suggestion is derived from the view that any part of the QRS complex written during a given interval of time in one lead is identical in origin with those parts of the QRS complex written during the same interval in other leads in the sense that it is produced by the same electrical forces. It is assumed that all the elementary electrical forces present at a given instant are equally effective, in proportion to their magnitude, in all the leads under consideration or that as far as these leads are concerned they are equivalent to a unique resultant electromotive force which may be substituted for them. Einthoven's equilateral triangle defines a resultant electromotive force, the cardiac vector, which may be substituted for the actual electromotive forces when dealing with limb leads, if the assumptions on which this triangle is based may be regarded as representing the true situation with sufficient accuracy for the purposes in mind. Now that it is customary to take precordial leads to which it is not applicable, as well as limb leads, it is not desirable to enthrone this point of view in our nomenclature and disregard others which are equally legitimate.

For this reason and because it greatly complicates the assignment of the letters Q, R and S to the initial group of ventricular deflections and the description of the form of the QRS complex, we believe that a downward deflection should never be labeled R on the ground that it occupies the same interval and represents the same resultant forces as an upward deflection in another lead to which this letter has been appropriately assigned. It is equally disadvantageous to label an upward deflection Q or S because it corresponds in time to a downward deflection in another lead to which the same letter has previously been allotted.

The considerations mentioned and the multiplicity of leads now in use fully justify the labeling of the QRS components of one lead without reference to the number or character of the QRS components in any other lead. The allocation of the symbols employed should be determined solely by the direction and sequence of these deflections in the lead under consideration.

RECOMMENDATIONS

1. The symbols P, T_a, QRS, T and U should be used to represent those deflections or groups of deflections to which they were originally assigned both when the electrocardiogram is normal and when it is abnormal.

2. In the majority of cases the QRS complex is superimposed on the T_a deflection. For this reason the level of reference from which the voltage of the QRS deflections is measured should be the level at which the first of these deflections begins. The voltage of an upward QRS deflection should be measured by estimating the vertical distance between the upper edge of the trace at the beginning of the QRS interval and the upper edge of the trace at the point where the deflection reaches its maximal elevation. The voltage of a downward deflection should be determined by estimating the vertical distance between the lower edge of the trace at the beginning of the QRS interval and the lower edge of the trace at that point of the deflection which is farthest from the reference level.

3. In order to indicate how the QRS complex should be subdivided for the purpose of assigning symbols to the deflections which it displays, we may describe a

QRS complex which has three components in the following terms: The first deflection begins at the onset of the QRS interval when the trace first leaves the reference level. From this point the trace rises or falls to a turning point where the direction of its motion is reversed. It may pass through a second or third turning point before crossing to the opposite side of the reference level.[1] At this crossing the first deflection ends and the second begins. The second deflection, necessarily opposite in direction to the first, must display one turning point and may display many; it does not end until the trace crosses the reference level for the second time. The third deflection begins at the second crossing and ends at the RS-T junction. No part of the QRS complex which does not display at least one turning point should be considered a separate deflection. If the RS-T junction is displaced and this junction and the last turning point lie on opposite sides of the reference level, that portion of the trace which lies between the last crossing and the RS-T junction should be considered part of the deflection to which the last turning point belongs.

The earliest QRS deflection which lies above the reference level should be labeled R. Any downward deflection which precedes R, so defined, should be labeled Q. The first of any downward deflections which may follow R should be labeled S. The first of any upward deflections which may follow S should be labeled R′, and the first of any downward deflections which may follow R′ should be labeled S′. If it is necessary to label still later deflections of the QRS group, the symbols R′′, S′′ and so on should be used in accordance with the same principles. When R is absent, so that the QRS complex consists of a single downward deflection, this deflection should be labeled QS. In statistical studies QS, Q and S deflections should be considered separately.

A deflection is "notched" when it displays more than one turning point on the same side of the reference level. A deflection is "slurred" when it displays a distinct and local "thickening" on either limb or at its apex, owing to a sudden and pronounced change in the slope of the curve, or, in other words, in the rate at which the trace is rising or falling.

When the form of the QRS complex varies from moment to moment because of the effect of the respiratory movements on the position of the heart or for some similar reason, the classification of this complex should be determined by the variety of complex which is most abundant or, if no type is numerically predominant, by the outline of the complexes which are of intermediate form. Very small QRS complexes (largest deflection less than 5 mm.) which display more than three components or multiple slurring and notching should be classed as "small and bizarre" or "vibratory."

4. The term RS-T junction should be used to indicate the point or shoulder which marks the end of the QRS complex, the point where the steep slopes of the QRS deflections are more or less abruptly replaced by the more gradual slopes which precede or comprise the first limb of the T wave. In many electrocardiograms the RS-T junction is followed by a nearly horizontal or gently sloping segment which lies on, above or below the reference level and ends with the onset of a much steeper slope that rises or falls to the apex of T. It is agreed that the term RS-T segment is a useful name for this part of the ventricular complex when it exists, even though it is proper to regard it as the earliest part of the T deflection. When there is no point between the RS-T junction and the apex of T at which a sharp change in the slope of the trace occurs, this part of the ventricular complex should be called the first limb of the T wave. When the term RS-T segment is used without reference to some particular electrocardiogram or to some particular class of electrocardiograms, it should be understood to refer merely to that part of the ventricular complex which immediately follows the RS-T junction. The reference level for the measurement of the displacement of the RS-T junction should be the same as the level of reference for the measurement of the QRS deflections. The level of reference for the measurement of the RS-T segment, the T wave and the U wave should be the isoelectric level when this can be determined; otherwise it should be the level of the trace at the beginning of the QRS interval. The isoelectric level is the level of the trace at the beginning of the P wave when the P wave occurs in its normal relation to the QRS deflections and is not superimposed on T or U.

5. The term "diphasic T waves" should be applied to those final ventricular deflections which present two distinct turning points, one on each side of the level of reference. If the earlier turning point lies below this level and the latter above it, the diphasic T wave may be said to be of the minus-plus ($\mp$) type. If the reverse is the case, it may be said to be of the plus-minus ($\pm$) type. When the term diphasic is used with reference to other deflections, to the QRS complex or to the ventricular complex as a whole, it should be used in the same sense.

6. When applied to the QRS complex, to the T deflection, to any other electrocardiographic component or to RS-T displacement, the term "concordant" should signify that the largest deflection or displacement is in the same direction in lead 3 as in lead 1. Under the same circumstances the term "discordant" should signify that the largest deflection or displacement in lead 3 is opposite in direction to that in lead 1.

1. When the trace is descending it crosses the reference level at the instant when its lower margin reaches a position below that which it occupied at the beginning of the QRS interval. When the trace is ascending it crosses the reference level at the instant when its upper margin reaches a position above that which it occupied at the beginning of the QRS interval.

SECOND SUPPLEMENTARY REPORT BY THE COMMITTEE OF THE AMERICAN HEART ASSOCIATION FOR THE STANDARDIZATION OF PRECORDIAL LEADS[2]

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Early in 1938 the Committee of the American Heart Association for the Standardization of Precordial Leads and a similar committee representing the Cardiac Society of Great Britain and Ireland made joint recommendations with reference to a single precordial lead for

2. It has been pointed out to us that the meaning of the last sentence of the third paragraph of our previous supplementary report is not clear. The correct interpretation of this sentence is as follows:

When the letters and subscripts specified are employed it shall be understood that in the case of the sternal leads the precordial electrode has been placed in the fourth intercostal space, and that in the case of the other leads it has been placed on a line drawn from the left sternal margin in the fourth intercostal space to the outer border of the apex beat and continued around the left side of the chest at the level of the apex beat. When the apex beat cannot be satisfactorily located, this line should be drawn from the left sternal margin in the fourth intercostal space to the point where the left midclavicular line crosses the center of the fifth intercostal space and should be continued around the left side of the chest at the level of this point.

routine use. In a supplementary report published in the same year, the American committee recommended that when multiple precordial leads were taken the precordial electrode be paired either with an electrode on the left leg or with a central terminal connected through equal resistances of 5,000 or more ohms to three electrodes, one on the right arm, one on the left arm and one on the left leg. Six precordial points were recommended as suitable locations for the precordial electrodes, and these may be referred to as the C_1, C_2, C_3, C_4, C_5 and C_6 positions. In the last few years the number of electrocardiographers who have abandoned single in favor of multiple precordial leads has rapidly increased, but there has been no uniformity as regards the number of leads taken, the location of the remote electrode paired with the precordial electrode or the locations of the precordial points regularly explored.

There has been a persistent demand that some further action be taken with reference to the standardization of precordial leads. We have therefore consulted and have attempted to reach an agreement with reference to the more important questions that have arisen in connection with this problem. It is agreed that many of these questions must be left unanswered until our knowledge of the precordial electrocardiogram is far more complete than at present. A great deal of methodical painstaking work is urgently needed with reference to the best location for the remote electrode, the desirability of taking precordial leads routinely and the best combination of locations for the precordial electrode. The present situation is not, however, due solely to inadequate information but also to a lack of complete agreement as to exactly what is meant by "best combination" and similar terms when used with reference to precordial leads, and as to whether the questions at issue are to be decided on empirical grounds alone or, if not, as to what basic principles should be given important consideration. The recommendations which follow must, for these reasons, be considered merely tentative.

The committee is agreed that a single precordial lead from the region of the cardiac apex, or from any other part of the precordium, is inadequate. When multiple precordial leads are taken, it is found that in the vast majority of cases the extreme right side of the precordium and the extreme left side of the precordium yield QRS complexes of more or less opposite form. Leads from a usually small region lying between those from which complexes of opposite types are obtained customarily yield complexes of intermediate or transitional form, which are often difficult to interpret when curves from points farther to the right and from points farther to the left are not available for comparison. The location and size of the region from which transitional complexes are obtained vary greatly from case to case and are not entirely constant in one and the same subject. When single precordial leads are taken from the outer border of the apex beat, the exploring electrode is, in actual practice, sometimes placed to the right of the region of transition mentioned and sometimes to the left of it, or within it. In serial observations on the same subject inaccuracy in placing this electrode or an alteration in the size or location of the region in question may be responsible for striking changes in the form of the curve obtained by what is technically the same lead.

This is only one of the causes for dissatisfaction with routine apical leads. When all cases are considered, regardless of whether the standard leads are normal or abnormal, it is perhaps true that a lead from the region of the apex or from the left anterior axillary line at the level of the apex will display abnormalities of the ventricular complex more often than any other single precordial lead. When, however, only those cases in which the limb leads are normal are considered, this is certainly not the case. It is now clear that, when the standard limb leads are normal, the precordial leads most likely to yield significantly abnormal curves are those from points lying between the left sternal border and the midclavicular line. Consequently single apical leads most often fail completely in those cases in which multiple precordial leads have most to offer.

The committee believes that three is the least number of precordial leads that can be regarded as satisfactory for general purposes. It suggests that those who wish to reduce the number of such leads to a minimum take leads from the C_1, C_3 and C_5 positions. All are urged to take additional leads whenever possible. A lead from the C_2 or a lead from the C_4 position may show diagnostic abnormalities when equally significant changes fail to occur in other leads. Those who follow our recommendations must remember that inversion of the T deflections in leads from the C_1 position is frequently encountered in normal adult subjects. It is believed that those who have had little experience with multiple precordial leads would gain much worthwhile information by taking a full set of six precordial leads on a few normal subjects and on a series of patients with known cardiac abnormalities of the commoner types.

It is agreed that the information available does not permit a definite decision on empirical grounds as to the best location for the remote electrode with which the exploring or precordial electrode is paired. It is recommended that the precordial electrode be paired with an electrode on the right arm, with an electrode on the left leg or with a central terminal connected through equal resistances of 5,000 or more ohms [3] to three electrodes: one on the right arm, one on the left arm and one on the left leg. Some, but not all, members of the committee who formerly placed the remote electrode on the left leg now prefer to place it on the right arm. It has been observed that, when the precordial electrocardiogram is judged by the normal standards at present available, a lead from a given point on the precordium may yield an abnormal curve if the exploring electrode is paired with a left leg electrode (CF lead) even though the curve obtained from the same point by using the right arm electrode as the reference point (CR lead) is within normal limits. The opposite situation may also arise. It has also been observed that, in certain cases of cardiac infarction in which diagnostic changes are present in the standard limb leads, CF leads display the most striking and CL leads (leads from the precordium to a left arm electrode) the least striking changes. These observations cannot, however, be interpreted as indicating that CF leads are always more reliable in the diagnosis of infarction than precordial leads of other kinds. There will be less confusion with reference to the effect of the remote electrode if it is clearly understood that each CR lead is equal to the corresponding CF lead plus standard lead 2, that each CL lead is equal to the corresponding CF lead plus lead 3 and that each central terminal lead is equal to the corresponding CF lead plus one-third the sum of

3. Recent observations indicate that in the vast majority of cases, if not in all, the omission of these resistances has no appreciable effect on the form of the precordial curves obtained. Consequently it may be satisfactory to connect the central terminal directly to the three extremity electrodes without the use of intervening resistances of any kind. Further studies should be made before this method is generally adopted.

leads 2 and 3 and is the algebraic mean of the CR, CL and CF leads from the same precordial point.

The committee does not desire at this time to make any recommendation bearing on the question as to whether precordial leads should be taken routinely or in selected cases only. It believes that precordial leads are most likely to yield information of diagnostic importance under the following circumstances: (1) whenever myocardial infarction is suspected or must be considered a possibility; (2) whenever myocardial disease is suspected or must be considered a possibility and other methods of examination yield no unequivocal evidence of cardiac disease; (3) whenever it is important to distinguish between right and left ventricular hypertrophy or between right and left bundle branch block, and this cannot be satisfactorily done by other means; (4) whenever for any reason a complete cardiac study is indicated.

Council on Pharmacy and Chemistry

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT.

AUSTIN E. SMITH, M.D., Secretary.

ORGANOGRAPHY WITH DIODRAST CONCENTRATED SOLUTION 70 PER CENT

Winthrop Chemical Company, Inc., presented for Council consideration Diodrast Concentrated Solution 70 Per Cent. The preparation is proposed for use in a special diagnostic procedure for visualization of the heart, the ascending and descending aorta and branches, the superior vena cava, the pulmonary artery and branches, the coronary arteries and other structures of the heart and mediastinum. It has also been used for cholangiography by injection of the material into the common bile duct. For cholangiography the amount of Diodrast Concentrated Solution 70 Per Cent varies within wide limits; as little as 15 cc. and as much as 100 cc. has been required by direct injection into the common bile duct. For cardiopulmonary visualization 40 to 45 cc. is injected in the average patient. The amount varies, however, according to the diameter of the chest, the size of the heart and certain pulmonary congestion. The manufacturer states that, where visualization of the pulmonary circulation is desired, 30 to 35 cc. is sufficient.

The technic in using Diodrast Concentrated Solution 70 Per Cent for such a study is relatively complicated and requires accurate timing and teamwork between the physician, the patient and the roentgenologist. The method consists in injecting the substance into the blood and taking roentgenograms simultaneously with the concentration of the opaque material in the cardiopulmonary system. In addition a preliminary examination of the chest with the x-rays is necessary in order to obtain data for roentgenography. At times it is necessary to determine the circulation rate of the blood for accuracy. There has also been developed a multiple exposure method in which eight x-ray exposures are taken within ten seconds.

The contraindications include hepatic disease, nephritis and hyperthyroidism. Premedication with a barbiturate is advisable; epinephrine is administered when there is a possibility of an allergic reaction or low blood pressure. The results of this method have been reported chiefly by Robb, Steinberg and their associates.[1] They have reported no serious consequences following 238 injections in 127 patients, of whom 42 were normal, 47 had pulmonary disease and the remainder heart disease. Results, according to this group of workers, have been of considerable aid in the detailed visualization of the cardiovascular system of the chest. They consider it safe, practical and of great value in the differential diagnoses of chest conditions. Von Baeyer and Liebow also consider the procedure an excellent one in the conditions mentioned. Stewart, Breimer and Maier[2] have reported in detail 4 cases in which cardioangiography was studied with Diodrast. A number of other investigators have also reported satisfactory results with the use of this substance with the conclusion that under the proper conditions there is a minimum of danger of harmful reactions with its use. In addition to the reports of these workers, the Council was referred to a number of reports submitted directly to the Winthrop Chemical Company totaling 849 cases in which 1,399 injections were given. The manufacturer has also submitted photographs of x-ray plates showing typical findings from this technic.

The Winthrop Chemical Company has submitted laboratory data on the tolerance of Diodrast Concentrated Solution 35 Per Cent and of the Concentrated Solution 70 Per Cent. It is admitted that subcutaneous or intramuscular injections resulted in induration which subsides within seventy-two to one hundred and forty-four hours. After ten days no local effect can be demonstrated following subcutaneous injection and after six days following intramuscular injection. Microscopic examination shows that the inflammatory tissue response gradually diminishes after twenty-four hours. Following intravenous injection in rats there were no symptoms when 3.5 Gm. per kilogram was administered. With administration of 4.0 Gm. per kilogram, slightly convulsive movements were observed, but the animals recovered within one-half to one hour; 4.5 to 5.0 Gm. per kilogram was fatal. Intravenous injection of 2.5 Gm. per kilogram resulted in mild hepatitis. Winthrop Chemical Company considers that in mice, dogs and man there was little tissue damage, probably because the compound is excreted more rapidly than in the rat. Thus, dogs injected with 4.0 Gm. per kilogram over a period of three days showed no ill effects. There is a transient fall in blood pressure together with an acceleration of respiration following as little as 0.75 Gm. per kilogram. Excretion of Diodrast is performed almost entirely by the kidneys; the substance is unchanged and there is little delay in excretion in dogs having kidney damage. With a dosage of 100 cc. into a human being weighing 75 Kg., the dose would approximate 1 Gm. per kilogram, which is considerably below the toxic dosages for the dog, the rat and other animals.

While use of radiopaque substances in the visualization of cardiac and pulmonary blood vessels seems to be highly promising, the technic of using a substance such as Diodrast Concentrated Solution for this purpose is relatively complicated when compared with the use of Diodrast 35 Per Cent of similar substances for visualization of other organs. It is entirely possible that the inherent nature of cardioangiography requires a skilled and meticulous technic. Most of the experimental work on the use of Diodrast 70 Per Cent for cholangiography was performed by Robb, Steinberg and their associates. Several other groups of workers, however, have obtained satisfactory results using the technic described by these investigators. It appears that this technic can be mastered by experienced workers who have the proper facilities, although it would be dangerous in the hands of persons who are inexperienced or who use the technic in a casual manner. Under the proper conditions the use of Diodrast 70 Per Cent for cholangiography appears to be a relatively safe procedure, since few untoward results have been encountered. This is, perhaps, because of the precautions taken by skilled workers.

As this diagnostic procedure appears to be of some value for the visualization of thoracic organs, as well as the biliary tract and possibly other organs, the Council voted to accept Diodrast Concentrated Solution 70 Per Cent (Winthrop Chemical Company, Inc.) for inclusion in New and Nonofficial Remedies, to be used, however, only by specialists or others who have the proper facilities and experience necessary for the relatively complicated technic.

1. Steinberg, Israel, and Robb, G. P.: Am. Rev. Tuberc. **38:** 557 (Nov.) 1938. Robb, G. P., and Steinberg, Israel: J. Clin. Investigation **17,** July, 1938; Am. J. Roentgenol. **41:** 1 (Jan.) 1939. Robb, G. P., and Weiss, Soma: Am. Heart J. **8:** 650-670, 1933. Robb, G. P., and Steinberg, Israel: Am. J. Roentgenol. **42:** 14 (July) 1939. Steinberg, Israel, and Robb, G. P.: Radiology **33:** 291 (Sept.) 1939. Steinberg, M. F.; Grishman, A., and Sussman, M. L.: Angiocardiography in Congenital Heart Disease: I. Dextrocardia, to be published.

2. Stewart, W. H.; Breimer, C. W., and Maier, H. C.: Am. J. Roentgenol. **46:** 636 (Nov.) 1941.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, APRIL 24, 1943

ENVIRONMENTAL TEMPERATURE AND MORTALITY IN BURNS

The use of heat versus cold as local therapy for injured or infected tissue continues to arouse debate. Enthusiasms for and diatribes against hot or cold applications date back to the time of Hippocrates. Although exact physiologic studies have shown the relative reactions which follow the heating or chilling of tissue, most physicians are still undecided when confronted with the necessity of making a decision as to whether to advise a hot water bottle or an ice cap.

The problem of heat versus cold reaches a higher plane of clinical importance in the treatment of surgical shock. For decades the shocked patient was surrounded with hot water bottles or even actually heated with various appliances. In a recent editorial [1] in THE JOURNAL the subject of cooling in shock was discussed at some length and the deleterious effects of warming the shocked patient were evaluated. The discussion was based not only on well established physiologic considerations but also on the recent important experimental studies of Blalock.

The influence of cold and heat on the human being's environmental temperatures has received but scant attention by investigators. Undoubtedly the availability of air conditioning equipment in recent years will stimulate such studies. Right now, during the present global war, the fact that our soldiers, sailors and marines must fight in such wide extremes of temperature emphasizes urgently the importance of knowledge concerning the influence of environmental temperature on various injuries sustained by our fighting men. A provocative experimental study on the influence of environmental temperatures on the mortality in extensive burns has just been published by Elman, Cox, Lischer and Mueller.[2] This study suggests that these considerations are really of paramount importance. These workers, combining the research facilities of a university and a commercial institution, have observed striking effects at environmental temperatures of 32, 55, 75 and 99 F. Rats under deep anesthesia were subjected to uniform severe thermal injuries involving 75 per cent of the skin surface. When they were stored at a temperature of 75 F., mortality was 25 to 32 per cent. However, when the animals were placed in colder rooms set at 32 or at 55 F. the mortality rose to 100 per cent. When placed in a heated environment of 99 F. the mortality also increased to 100 per cent. These differences are so pronounced as to suggest a profound influence of environmental temperature on the vital reparative processes which tend to compensate for the deleterious effects of severe burns. Indeed, they tend to show that 75 F. is somewhere near the optimal environmental temperature, a fact which is not surprising as this is usually considered the most comfortable level. Quite similar findings were reported by Sanford Rosenthal [3] in a paper appearing at about the same time. The observations were made on mice during the course of experiments on the chemotherapy of burns in the laboratories of the U. S. Public Health Service.

The practical inferences which flow from these simple but clearcut observations are significant. First they add evidence to that already mentioned in surgical shock [1] that the common practice of covering the burned patient with a heated cradle may be definitely deleterious. Such a view has found expression during the past decade in several clinical reports on the treatment of burns. These bedside objections to the use of heat in burns find ample justification in the experiments just cited. These studies, however, also suggest that even in temperate climates when the summer temperature rises to 100 F. or in tropical climates where this level may even be exceeded, air conditioned rooms may well prove an important method of reducing the hazard of a fatal outcome due to severe burns. It also suggests that further investigations as to the influence of environmental temperature in other conditions will probably also reveal important influences from which therapeutic inferences may be drawn.

1. Cooling in Shock, editorial, J. A. M. A. **121**: 432 (Feb. 6) 1943.

2. Elman, Robert; Cox, W. M., Jr.; Lischer, Carl, and Mueller, A. J.: Proc. Soc. Exper. Biol. & Med. **51**: 350 (Dec.) 1942.

3. Rosenthal, S. M.: Pub. Health Rep. **57**: 1923 (Dec. 18) 1942.

EXAMPLES OF RECENT PROGRESS IN VIRUS RESEARCH

A new virus papilloma is described by Parsons and Kidd,[1] a noncancerous papillomatosis of the oral lining of domestic rabbits. The growths are situated mainly on the under side of the tongue. Parsons and Kidd have extracted a filtrable virus from these growths which reproduces the disease in the oral mucosa of rabbits. As yet there has been no effect in other rabbit tissues or in the oral mucosa of other animals. This form of virus papilloma, of which there now is a considerable number, does not show any tendency to become cancerous. Its natural transmission appears to be "by a direct handing along in the family."

Further studies of feline agranulocytosis by Syverton and Lawrence and their associates [2] show that the specific virus of this disease is not related to various other pathogenic viruses, human and animal, and that it produces a specific immunity. The disease is characterized by profound leukopenia, proliferation of reticuloendothelial cells and intranuclear inclusion bodies.

Chambers and his associates [3] report that studies by ultracentrifugation indicate that influenza A virus is one of the smallest specific agents so far isolated; also that this virus is one of the least complex, as it appears to be composed principally of nucleoprotein.

By means of differential ultracentrifugation of infected human, monkey and chimpanzee stools, Melnick [4] obtained the virus of epidemic poliomyelitis in purified and concentrated form. The virus so isolated caused poliomyelitis in monkeys; hence it appears that a sensitive method for detecting the virus has been found.

Sanders and Alexander [5] report the isolation and identification of a filtrable virus from conjunctival scrapings from 2 patients suffering with epidemic keratoconjunctivitis. This virus proved to be pathogenic for mice and it produced a mild but characteristic keratoconjunctivitis in a human volunteer, whose serum contained specific antibodies for the virus one month after the infection. Antibodies were also demonstrated in the serum of patients who had passed through attacks of the disease.

These examples of recent research on viruses are not intended as an exhaustive review; they are more or less random selections which show that the study of pathogenic filtrable viruses continues to give results of scientific and practical value. The opportunities for research in the field of the viruses grow daily more numerous; the results promise vast benefit to mankind.

1. Parsons, R. J., and Kidd, J. G.: Oral Papillomatosis of Rabbits: A Virus Disase, J. Exper. Med. **77:** 233 (March) 1943.

2. Syverton, J. T., and Lawrence, J. S.; Ackart, R. J.; Adams, W. S.; Ervin, D. M.; Haskins, A. L., Jr.; Saunders, R. H., Jr.; Stringfellow, M. B., and Wetrich, R. M.: The Virus of Infectious Feline Agranulocytosis: I. Characters of the Virus: Pathogenicity, J. Exper. Med. **77:** 41 (Jan) 1943. Lawrence, J. S.; Syverton, J. T., and others: II. Immunological Relation to the Other Viruses, ibid., p. 57.

3. Chambers, L. A., and Henle, Werner: Studies on the Nature of the Virus of Influenza: I. The Dispersion of the Virus of Influenza A in Tissue Emulsion and in Extraembryonic Fluids of the Chick, J. Exper. Med. **77:** 251 (March) 1943. Chambers, L. A.; Henle, Werner; Lauffer, M. A., and Anderson, T. F.: II. The Size of the Infectious Unit in Influenza A, ibid., p. 265.

4. Melnick, J. L.: The Ultracentrifuge as an Aid in the Detection of Poliomyelitis Virus, J. Exper. Med. **77:** 195 (March) 1943.

5. Sanders, Murray, and Alexander, R. C.: Epidemic Keratoconjunctivitis, J. Exper. Med. **77:** 71 (Jan.) 1943.

Current Comment

SULFAGUANIDINE AND SUCCINYLSULFATHIAZOLE FOR BACILLARY DYSENTERY

During the past year there have been numerous reports on sulfaguanidine and a smaller number on succinylsulfathiazole in the treatment of bacillary dysentery, both in the active state and in carriers. Lyon,[1] who reported more than 300 cases, found sulfaguanidine effective in acute bacillary dysentery but less potent after the first five to ten days, in recurrent attacks and in the chronic forms. It was effective in acute bacillary dysentery in adults and also in infants and children. He discussed the results with succinylsulfathiazole in 14 cases of severe or moderately severe bacillary dysentery. This agent appeared to have all the virtues of sulfaguanidine as to therapeutic efficacy and freedom from untoward effects. Among the most recent reports on this subject is that of Bulmer and Priest,[2] who during 1941 treated 554 soldiers in a military hospital in the Middle East for bacillary dysentery. Seventy-six of these were given sulfaguanidine. These cases were not consecutive but were selected because of (1) the acuteness of the diarrhea, (2) the severity of the toxemia, (3) the persistence of the diarrhea or (4) the military importance of an early recovery among a few "key" persons. In this small series the drug failed to have any effect on 3 persons, although all eventually recovered. There were only two deaths. In the remaining cases the response to the drug was prompt and often dramatic. The drug was lacking in toxic effects. They believe, as do several of the others [3] who have reported on the subject, that sulfaguanidine is a specific drug for bacillary dysentery. From the evidence, so far as it is as yet available, succinylsulfathiazole [4] appears to be practically as effective and nontoxic as sulfaguanidine and, if further investigation bears out preliminary observations, may be proved somewhat superior.

1. Lyon, G. M.: The Chemotherapy of Bacillary Dysentery, U. S. Nav. M. Bull. **40:** 601 (July) 1942.

2. Bulmer, Ernest, and Priest, W. M.: Sulfaguanidine in Treatment of Bacillary Dysentery, J. Roy. Army M. Corps **79:** 277 (Dec.) 1942.

3. Ehlen, J. G.: Sulfanilylguanidine in the Treatment of Enteric Infections, South. M. J. **35:** 302 (March) 1942. Edwards, Lydia B.: Sulfaguanidine in the Treatment of Bacillary Dysentery, ibid. **35:** 48 (Jan.) 1942. Jonas, A. F.: The Present Role of Sulfaguanidine in Medicine and Surgery, Nebraska M. J. **27:** 251 (July) 1942. Hawking, Frank: Sulfonamide Compounds in Feces, Lancet **1:** 290 (March 7) 1942. Hall, L. C.: The Use of Sulfaguanidine in Enteric Infections, J. Pediat. **20:** 328 (March) 1942. Hardy, A. V.; Watt, James; Peterson, Jerome, and Schlosser, Elise: Studies of the Acute Diarrheal Diseases, Pub. Health Rep. **57:** 529 (April 10) 1942. Rantz, L. A., and Kirby, W. M. M.: The Use of Sulfaguanidine in the Treatment of Dysentery Carriers, J. A. M. A. **118:** 1268 (April 11) 1942. Opper, Lincoln, and Hale, Virginia: Sulfaguanidine in Treatment of Dysentery (Bacterium Flexneri) Carriers, ibid. **119:** 1489 (Aug. 29) 1942.

4. Poth, E. J.; Chenoweth, B. M., Jr., and Knotts, F. L.: Treatment of Bacillary Dysentery with Succinylsulfathiazole, J. Lab. & Clin. Med. **28:** 162 (Nov.) 1942. Kirby, W. M. M., and Rantz, L. A.: The Treatment of Typhoid and Dysentery Carriers with Succinylsulfathiazole, J. A. M. A. **119:** 615 (June 20) 1942. Smyth, C. J.; Finkelstein, M. B.; Gould, S. E.; Koppa, T. M., and Leeder, F. S.: Acute Bacillary Dysentery (Flexner), this issue, p. 1325. Lyon.[1]

"LOST PLASMA" IN HEMORRHAGIC SHOCK

There is a theory, known as the "lost plasma" theory, that death results in hemorrhagic shock from reduction in the blood volume by passage of plasma through the capillaries into the tissues. The evidence cannot be said to be absolutely conclusive. An experimental study of the problem has been made on dogs by Fine and Seligman,[1] using a radiobromoprotein, the preparation of which they describe in detail, for the identification of plasma proteins. By injecting this radioprotein into the circulation and tracing its subsequent course, they could follow the movement of plasma proteins from the blood into the tissues in the normal dog as well as in dogs in hemorrhagic shock. The radioactivity of the circulating plasma and of the tissues was the same in the shock dogs as in normal controls. The evidence does not indicate that death from hemorrhagic shock in dogs is caused by a progressive decline in the blood volume due to the passage of plasma into the tissues. The conclusion drawn by Fine and Seligman from their experiments that in hemorrhagic shock of dogs plasma loss by passage into the tissues is not a crucial factor seems warranted.

CHARACTERISTICS OF INSTITUTIONAL INMATES IN 1940

On April 1, 1940, according to an analysis of statistics recently issued by Capt of the Bureau of the Census, there were 591,365 patients 14 years old and over in mental institutions.[1] In addition, persons in homes for the aged, infirm or needy numbered 245,026. Inmates of prisons and reformatories totaled 217,919, and inmates of local jails and workhouses 99,249. Officials and attendants in institutions were excluded from the statistics of the institutional population, as were all persons in tuberculosis sanatoriums. Of all inmates 70 per cent were native whites, 16 per cent were foreign born whites and 14 per cent were nonwhites. Males constituted 93 per cent for prisons and reformatories, 91 per cent for local jails and workhouses, 59 per cent for homes for the aged, infirm or needy and 54 per cent for mental institutions. The percentage of all persons 14 and over inhabiting institutions was 1.16 for the United States as a whole; the District of Columbia had the highest percentage with 1.72, followed by Delaware, Virginia, Maryland and New York. Strangely Columbus, Ohio, led all other large cities with 3.59 per cent of all persons 14 and over in an institution; Memphis, with a corresponding figure of 0.28 per cent, seems to belie its reputation for criminality. The figure of 0.56 per cent for New York City contrasts with 1.78 per cent for one of its constituent boroughs—Richmond! The sometimes curious sidelight effects of these figures remains largely unexplained. However, the over-all picture is clear: one out of every hundred persons 14 years and over in the United States is an inmate of an institution.

1. Fine, Jacob, and Seligman, Arnold M.: Traumatic Shock: IV. A Study of the Problem of the "Lost Plasma" in Hemorrhagic Shock by the Use of Radioactive Plasma Protein, J. Clin. Investigation **22**: 285 (March) 1943.

1. U. S. Department of Commerce, Bureau of the Census, Washington: Characteristics of the Institutional Population: 1940, Series P-3, No. 32.

A COUNTY PROGRAM FOR THE PREVENTION OF DEAFNESS

Washington County, Md., is inaugurating a program for the prevention of deafness to be conducted as a function of Services for Crippled Children. The need of such a program may be gleaned from a previous survey which has shown that some 2.5 per cent of school children in the county have impaired hearing. The program will augment the limited facilities for otolaryngology in the community and will provide for radon therapy for adenoid tissue. The following immediate steps are projected: 1. Education of parents in the necessity for proper medical care for children with acute otitis media. This is to be accomplished through Parent-Teacher Association meetings, distribution of pamphlets, newspapers, preschool and school medical conferences and home nursing visits, especially for school children with earaches. 2. Testing of hearing in public and parochial schools. Each child will be tested approximately three times during his school life. The screening test will be performed by a trained technician from the Frederick School for the Deaf. 3. Establishment of an ear, nose and throat clinic to be conducted by a trained specialist. Provisions will be made by arrangement with the local hospital and the local ear, nose and throat profession for special treatment, such as tonsil and adenoid operations and mastoid operations. Dr. C. H. Halliday, director of Services for Crippled Children of the State of Maryland Department of Health, emphasizes that the program is to be carried out under the supervision of the county health officer with the approval of the county medical society. It is to be a cooperative study by the health agencies, medical societies and state board of education. The private physician is to be brought into active participation.

THE RESPIRATORY PATTERNS AT BIRTH

The physiologist Sir Joseph Barcroft could not find any detailed description of the exact ways in which children born normally begin to breathe. In a small series of observations of normal births by mothers "to whom not more than an occasional whiff of general anesthetic was given" he recognized three obvious patterns of initial breathing, the rhythmic, the single prolonged inspiration and the gasp. The rhythmic type begins on emergence of the oncoming head and is associated with only slight jaundice. In the other two types there is considerable to even deep cyanosis. The gasp is dependent on the lower part of the medulla, the higher parts of the brain being functionless on account of asphyxia, of which cyanosis is the external sign. In rhythmic respiration, parts higher in the brain are functioning. In the initially protracted inspiration the respiratory effort seems to consist of a number of single inspirations without corresponding expiration, owing, Barcroft[1] suggests, to failure of the inhibitory stimuli associated with normal respiration. In all probability the study of a larger number of cases than Barcroft's may furnish more data on the initial respiratory pattern and its relation to sensitivity to asphyxia and other influences of the brain at birth.

1. Barcroft, Joseph: Respiratory Patterns at Birth, Cambridge University Medical Society Magazine **20**: 6 (Michaelmas Term) 1942.

MEDICINE AND THE WAR

In this section of The Journal each week will appear official notices by the Committee on War Participation of the American Medical Association, announcements by the Surgeon Generals of the Army, Navy and Public Health Service, and other governmental agencies dealing with medicine and the war and such other information and announcements as will be useful to the medical profession.

ARMY

AUSTRALIA PROVIDES YANKS WITH HOSPITAL

The government of Australia, under its program of reciprocal lend-lease, has provided the United States with a new ten story hospital "somewhere in Australia" to be used by American soldiers, sailors and marines recuperating from illness and wounds suffered in the Pacific. The transfer does not involve payment of any sort. The building, construction of which was undertaken as a civic enterprise at a cost of $3,000,000, was taken over and adapted for the American forces to accommodate several times its original capacity. It is complete with laboratories, operating rooms, nurses' quarters and administrative offices. All ten stories are now being used. The main buildings are well arranged. Verandas for convalescents are supplemented by broad spaces on the roof, where servicemen gather to rest in glass enclosed rooms or in the open air. Recreational equipment is available. The new hospital is one of many Australian contributions to the United States forces in the Pacific as reciprocal lend-lease. Australia provides most of the food for our troops on the mainland and has recently undertaken to supply food as well to American troops in New Guinea, the Solomons and other islands in the South and Southwest Pacific theaters.

COLONEL DIBBLE AND MAJOR GLEASON REPORTED MISSING

An airplane accident which occurred in the Southern Pacific area was recently reported in the newspapers and among those missing were Col. John Dibble and Major James J. Gleason, both of the Medical Corps. Colonel Dibble was commissioned a first lieutenant in the medical corps in January 1917, in which year he graduated from the Army Medical School following his graduation in medicine at the University of Pennsylvania in 1915. He was an honor graduate of the School for Flight Surgeons in 1919 and graduated from the Medical Field Service School advanced course in 1934. He was appointed from New Jersey. Major Gleason, whose home address was Long Island City, N. Y., was born in 1897 and graduated from Loyola University School of Medicine, Chicago, in 1928. Major Gleason entered the military service about Aug. 1, 1942.

TWENTY-FIFTH ANNIVERSARY OF SCHOOL OF AVIATION MEDICINE

The twenty-fifth anniversary of the School of Aviation Medicine was celebrated, April 1-3, at Randolph Field, Texas. Several of the original group who assembled at Hazelhurst Field, Mineola, Long Island, N. Y., on Jan. 19, 1918 to establish formally research and training in aviation medicine were present for the exercises. The program consisted in the dedication of a memorial window in the Post Chapel (THE JOURNAL, March 13, p. 846). This window, bearing the wings of the flight surgeon, the seal of the school and depicting St. Christopher, the patron saint of aviators and all travelers, was presented to the chapel by Class 42-F Aviation Medical Examiners, which was under instruction at this station from Sept. 21 to Dec. 17, 1942. Following the dedication of the window the new research laboratory building was dedicated by Brig. Gen. Eugen G. Reinartz, commandant of the school.

A review of the classes in aviation medicine, aviation physiology, enlisted flight surgeons' assistants and the Detachment Medical Department was held on April 2. In the reviewing stand were Brigadier General Reinartz, Commandant; Brig. Gen. W. E. Carter, G. S. C., Chief of Staff, Army Air Forces, Gulf Coast Training Center; Col. W. C. White, A. C., Commanding General Instructors School; Col. Walter C. Jensen, M. C., Acting the Air Surgeon; Col. Fabian Pratt, M. C., Surgeon Fourth Air Force; Drs. Eugene R. Lewis and Isaac H. Jones of Los Angeles, members of the original Medical Research Board; Lieut. Comdr. Robert J. Hunter (MC), U.S.N.R., the first flight surgeon to report for duty as such, and Dr. A. C. Bachmeyer, Associate Dean, Department of Biological Science, University of Chicago, a pioneer in Aviation Medicine. Lieut. Col. W. Harvey Kernan, M. A. C., executive officer of the school, and Major Harold F. Pierce, M. C., Randolph Field, members of the first group reporting to Hazelhurst field for duty at the original Medical Research Laboratory, were also present. The anniversary dinner was attended by members of the staff of the school and their wives, officers of the Air Forces, past commandants of the school and out of town guests. Saturday was devoted to scientific meetings.

MOBILE X-RAY UNITS FOR RUSSIA

Thirteen mobile trailer units, each fitted with portable x-ray equipment that can be set up during battle or air raids in twenty minutes, have been purchased in this country by English donors for the Russian army. Spanish refugees in England donated two of the units and various English organizations the others. Two units will be shipped first to England for acceptance ceremonies featuring Mrs. Ivan Maisky, wife of the Russian ambassador to England. The trailers are equipped with x-ray units manufactured by the Westinghouse X-Ray Division, Baltimore. Each trailer carries complete facilities also for fluoroscopy. The x-ray equipment can be quickly removed from the trailer and set up in a shack or tent by two members of the medical crews assigned to each unit. Complete darkroom equipment is provided for making permanent records of injuries on regular size x-ray films. The trailers are constructed of sheet metal with hinged sides and ends to permit speedy loading. To prevent damage the x-ray apparatus is packed in padded boxes, which are arranged to receive each component part of the equipment in its proper order. Power to operate the equipment is supplied by a generator mounted in the trailer and driven by a gasoline engine. An ample length of supply cord enables the generator to be stationed up to 150 feet from the x-ray unit if necessary.

SIXTEEN NURSES MADE LIEUTENANT COLONELS

The War Department, acting under the authority of the nurse promotion act of Dec. 22, 1942, has advanced sixteen captains of the Army Nurse Corps to the grade of lieutenant colonel and has promoted an additional fifteen captains to the grade of major. The promotions involve no transfers, although a few occurred recently incident to the changes in the nursing division of the Office of the Surgeon General, which changes, the *Army and Navy Journal* says, were the natural accompaniment of a change in the superintendent of nurses. The fifteen majors are eventually to be increased to a total of thirty-nine by subsequent promotions. A number of additional promotions to the grade of captain will be made soon, not only to fill the vacancies created by these promotions, but also to increase the number of captains in the Army Nurse Corps to one hundred and eighty-one.

PRESBYTERIAN HOSPITAL (CHICAGO) UNIT ACTIVATED

On March 19, twenty-four doctors and thirty-two nurses of the Thirteenth U. S. Army General Hospital (sponsored by the Presbyterian Hospital, Chicago) left for Camp Robinson, Arkansas, to joint seven other medical officers and some three hundred and sixty-five enlisted men who had reported at Camp Robinson at an earlier date (THE JOURNAL, March 13, p. 846), thus reactivating Base Hospital No. 13, which was sponsored by the Presbyterian Hospital in service in the first world war. The commanding officer of the Thirteenth General Hospital will be Col. Lyle S. Powell, who served in the first world war in France and recently was a member of the staff of the Army Field Service School, Carlisle Barracks, Pennsylvania. Colonel Powell formerly was a member of the faculty of the University of Kansas. The other medical and dental officers on duty with the unit are as follows:

MEDICAL SERVICE

Lieut. Col. Homer K. Nicoll	Capt. John Tysell
Major O. Earle Gray	Capt. Bertram O. Nelson
Major George W. Stuppy	Capt. Donald A. Morrison
Major George C. Turner	Capt. Herbert C. Breuhaus
Major C. Jack Harrison	Capt. Ralph E. Talbott
Capt. Joseph Bennett	Lieut. Richard P. Morris
Capt. James Webster	Lieut. W. L. Riker

SURGICAL SERVICE

Lieut. Col. Edwin M. Miller	Capt. Clayton E. Brock
Major Linden J. Wallner	Capt. Charles S. Textor
Major Cyril V. Crane	Capt. Cecil Draa
Major Francis H. Straus	Capt. Frank B. Papierniak
Major Richard K. Gilchrist	Capt. Hugo C. Baum
Major Stanley Lawton	Lieut. Fred Max Marquis
Major Egbert H. Fell	Lieut. William C. Cameron
Major Arthur Diggs	Lieut. Isaac Michael
Major John Olwin	Lieut. Frederic A. DePeyster
Capt. Stanton A. Friedberg	

LABORATORY SERVICE

Major Evan Barton	Lieut. Ralph L. High
Capt. Franklin Moore	

X-RAY SERVICE

Capt. George L. Pelkey	Lieut. Edward S. Murphy

DENTAL SERVICE

Capt. Arthur R. Hanson	Lieut. A. Leo Klein
Capt. John M. Spence	Lieut. Roger K. Stockton
Lieut. Richard Holic	

The chief nurse will be 1st Lieut. Nelle Crout and the other nurses, when recalled to the unit, will bring the number of nurses to about a hundred. Among the enlisted men in the present unit are several whose fathers served with the original Base Hospital No. 13 at Limoges, France, from May 1918 until after the armistice was signed.

CAPTAIN WOLFE AWARDED SOLDIER'S MEDAL

The War Department announced on March 1 the award of the Soldier's Medal to Capt. Russell S. Wolfe of the Medical Corps for heroism on Aug. 8, 1942 in the vicinity of Requin Bay in the Solomon Islands. Captain Wolfe and two infantry soldiers manned a small skiff and in a heavy and dangerous surf rescued the survivors after an army plane had been forced to land at sea. Captain Wolfe's home address is Houston, Texas.

NEW SUPERINTENDENT OF ARMY NURSE CORPS

Miss Florence A. Blanchfield, Lieutenant Colonel, Army Nurse Corps, has been appointed superintendent of that corps, effective June 1, to succeed Mrs. Julia O. Flikke, who will retire on May 31. Miss Blanchfield was assigned to the Surgeon General's Office in 1935 and was appointed assistant superintendent of the Army Nurse Corps in 1939.

AVIATION MEDICAL EXAMINERS

Another class in aviation medicine for aviation medical examiners graduated recently. The didactic portion of the course was conducted at the School of Aviation Medicine in Texas and the practical portion at three army air forces classification centers. Graduation exercises were held at each of the three centers. The list of graduates follows:

ALABAMA

William Thomas Daniel, 1st Lieut., Birmingham.
George E. Johnson, Captain, Uriah.
Madison Reeves Pope, Captain, Palladega.

ARIZONA

Erroll Payne Palmer Jr., 1st Lieut., Phoenix.
Russell O. Raymond, 1st Lieut., Flagstaff.

ARKANSAS

Orville B. McCoy, 1st Lieut, Harrison.
John W. Smith, 1st Lieut., Little Rock.

CALIFORNIA

Deane Taylor Adams, 1st Lieut., San Jose.
August Alexander Antipa, 1st Lieut., San Francisco.
Robert Lynwood Blackmun, 1st Lieut., Los Angeles.
Frank Herbert Bowles Jr., 1st Lieut., San Francisco.
Burton Kent Brock, 1st Lieut., Bakersfield.
Herschel S. Burns, Captain, Arcadia.
Harold Galeener Carter, 1st Lieut., San Diego.
Maxwell Peterson Fonda, 1st Lieut., Los Angeles.
Kirk Durand Garretson, 1st Lieut., San Francisco.
Henrik Sofas Graeser, Major, Woodland.
Alfred John Heldfond, 1st Lieut., Los Angeles.
William Cloyce Huff, 1st Lieut., Ventura.
William Travis Kelley, 1st Lieut., Oxnard.
Jack Albert Lighthill, 1st Lieut., Santa Monica.
Edward Gerald Mack, 1st Lieut., Beverly Hills (Los Angeles).
Clement Joseph Molony, Captain, Los Angeles.
Irving George Newman, 1st Lieut., Beverly Hills.
Frederick Powers-Heald, 1st Lieut., El Centro.
Joseph Bonara Reis, 1st Lieut., San Leandro.
Paul Curtis Roberts, 1st Lieut., Indio.
James Roberts Savage, 1st Lieut., San Bernardino.
Ernest Tim Smith, 1st Lieut., Glendale.
Harold Dumer Smith, Captain, Pomona.
Malcolm James Tinney, Captain, Placerville.
Carl Elmer Willers, 1st Lieut., Chowchilla.
Julius Zelman, 1st Lieut., San Bernardino.

COLORADO

Nathan Paul Isbell, Major, Denver.
Thomas Orland Plummer, Captain, Montrose.
George Sidney Williams Jr., 1st Lieut., Denver.

CONNECTICUT

Earle George Haliday, Captain, Stonington.
Nicholas Salvador Peters, 1st Lieut., Bridgeport.

DELAWARE

George Augustus Connolly, 1st Lieut., Wilmington.

DISTRICT OF COLUMBIA

Raymond Arnold Lawn, Major, Washington.
Kenneth Eugene Pletcher, Captain, Washington.
Carey Addison Stone Jr., 1st Lieut., Washington.

FLORIDA

Henry Samuel Blank, Captain, Lake City.
Albert Harvey Gleason, 1st Lieut., Umatilla.
Joseph Jacob Lowenthal, 1st Lieut., Jacksonville.
Alexander Robbins, 1st Lieut., Miami Beach.

GEORGIA

Bertram Price Avera Jr., 1st Lieut., Augusta.
Samuel Young Brown, 1st Lieut., Atlanta.
Fred Jessup Coleman, 1st Lieut., Augusta.
Hayden Hackney Donahue, 1st Lieut., Augusta.
John P. Jones, 1st Lieut., Macon.
Maurice Rich, 1st Lieut., Atlanta.

IDAHO

Lewis Baty Hunter, 1st Lieut., Wallace.
Albert Milton Peterson, 1st Lieut., Wallace.
David Warren Springer, 1st Lieut., Boise.

ILLINOIS

George Jaeger Best, 1st Lieut., Peoria.
Walter August Bock, 1st Lieut., Chicago.
Edward E. Cannon, 1st Lieut., Chicago.
John Sheldon Clark Jr., 1st Lieut., Chicago.
Wendel Rayburn Freeman, 1st Lieut., Champaign.
Robert Henner, Captain, Chicago.
Cletus Timothy Kearney, 1st Lieut., Gridley.
Milton Harold Partridge, 1st Lieut., Elgin.
Voris Ralph Payne, 1st Lieut., Wayne City.
William P. Phillips, 1st Lieut., Chicago.
Robert Bruce Rutherford, Captain, Peoria.
William Bernard Seamon, 1st Lieut., Chicago.
Henry Fred Otto Steinbock, 1st Lieut., Villa Park.
Kent Lincoln Wattleworth, 1st Lieut., Newton.

INDIANA

Harold C. Adkins, Captain, Indianapolis.
John B. Berkebile, 1st Lieut., Peru.
John Perring Birdzell, 1st Lieut., Crown Point.
Roderick Lee Boling, 1st Lieut., Indianapolis.
Charles Eugene Cook, 1st Lieut., North Manchester.
Hugh Wilson Eikenberry, 1st Lieut., Peru.
Lester Lathrop Hardy, 1st Lieut., Indianapolis.
Voris Francis McFall, 1st Lieut., Anderson.
Vernon Kay Pancoast, 1st Lieut., Elkhart.
Frederic Ginther Perry, 1st Lieut., Plymouth.
Robert Maurice Salassa, 1st Lieut., Indianapolis.
Byron John Smith, 1st Lieut., Kingman.
Donald E. Vivian, 1st Lieut., Indianapolis.
Robert Hadley Wiseheart, 1st Lieut., Lebanon.

IOWA

Nelson Miles Black Jr., 1st Lieut., Iowa City.
Charles Hubert Fee, 1st Lieut., Denison.
Robert James Porter, 1st Lieut., Des Moines.

KANSAS

Letteer George Howard Lewis, 1st Lieut., McPherson.
Doyle Alexander Shrader, 1st Lieut., Kansas City.
George Lawrence Thorpe, Captain, Valley Center.

KENTUCKY

Rankin Clay Blount, Captain, Louisville.
Joseph Charles Denniston, 1st Lieut., Russellville.
John A. Dorger, 1st Lieut., Covington.
Martin James Harris, Captain, Louisville.
Louis Otto Mitzlaff, 1st Lieut., Louisville.

Thomas Lowery Phillips Jr., 1st Lieut., Louisville.
Francis Glover Plymale, 1st Lieut., Louisville.
John Norman Rich, Captain, Philadelphia (Mayfield).
Livingston Augustus Wahle, 1st. Lieut., Henderson.

LOUISIANA

William Pierce Addison Jr., 1st Lieut., Shreveport.
Griff Wafford Bilbro, 1st Lieut., New Orleans.
Ernest George Debakey, 1st Lieut., New Orleans.
Reed Anthony Fontenot, 1st Lieut., Ville Platte.
Marshall Morris Searle, 1st Lieut., Amite.
Jack Murff Sheppard, 1st Lieut., Pineville.
Seals Samuel Speer, 1st Lieut., Ringgold.
Ephraim Lionel Wagner, 1st Lieut., New Orleans.
Joseph Edwin Warren, 1st Lieut., New Orleans.
Hugh Murphy Yearwood, 1st Lieut., Shreveport.

MAINE

Napoleon Joseph Gingras, 1st Lieut., Augusta.

MARYLAND

Bruce Johnston Franz, 1st Lieut., Baltimore.
Elmer Walter Haertig, 1st Lieut., Towson.
Arthur Joseph Katzberg, 1st Lieut., Baltimore.
Clarence Watson Ledoux, 1st Lieut., Baltimore.
James Joseph Nolan, 1st Lieut., Cantonsville.
Alexander Erskine Sproul, 1st Lieut., Baltimore.

MASSACHUSETTS

Milton F. Brougham, 1st Lieut., Boston.
William Francis Croskery, Captain, Milton.
Edward Francis Higgins, 1st Lieut., Worcester.
James Stephen Kavanah, Captain, Methuen.
Francis James Kelly, 1st Lieut., Worcester.
Henry Long Kirkendall, Captain, Worcester.
James Philip Mullowney, 1st Lieut., Worcester.
John Milne Murray, Major, Boston.
Melvin Thomas Pennell, 1st Lieut., Boston.

MICHIGAN

James Barron, 1st Lieut., Detroit.
Daniel Junior Carothers, 1st Lieut., Charlotte.
Bernard Jacob Goldman, Captain, Detroit.
Roderic Bristol Howell, Captain, Ann Arbor.
William Albert Joerin, 1st Lieut., Coldwater.
Thomas D. Johnson, 1st Lieut., Augusta.
Ward Rayfield Johnson, 1st Lieut., Channing.
William Davis Knapp, 1st Lieut., Detroit.
Robert Kuhn, 1st Lieut., Highland Park.
Rowland Lionel Mindlin, Captain, Detroit.
Eugene Henry Quigley, Captain, Eloise.
Benton Adam Schiff, 1st Lieut., Flint.
Leopold J. Snyder, 1st Lieut., Eloise.
Aaron Carl Stander, 1st Lieut., Saginaw.
Robert Benjamin Sweet, 1st Lieut., Ann Arbor.

MINNESOTA

Lauri Edwin Koskela, 1st Lieut., Sebeka.
John Edward Thue Haavik, 1st Lieut., St. Paul.
Benedict Trach, 1st Lieut., Minneapolis.
Maurice Nihill Walsh, Major, Rochester.
Frederick Phillip Arny, 1st Lieut., Preston.
Milton Monroe Balcome, 1st Lieut., St. Paul.
Robert George Hankerson, 1st Lieut., Minnesota Lake.
Bernard Leo Kreilkamp, 1st Lieut., Rochester.
John C. Lillie, 1st Lieut, Rochester.
Erven Enzia Pumala, 1st Lieut., Minneapolis.
Robert Thomas Rowland, 1st Lieut., Houston.

MISSISSIPPI

Hugh Kimbriel Curry, 1st Lieut., Eupora.

MISSOURI

William Max Aldredge, 1st Lieut., St. Louis.
Kenneth Clayton Coffelt, 1st Lieut., Springfield.
Dillard Marion Eubank, Captain, Raytown.
Joseph Louis Glaser, 1st Lieut., St. Louis.
William Robertson Oakes, 1st Lieut., St. Louis.
James Hartford Robertson, 1st Lieut., St. Louis.
Vergil Nelson Slee, 1st Lieut., St. Louis.
Jerome Norman Tober, 1st Lieut., St. Louis.
Robert Benjamin Wilson, 1st Lieut., Lake City.

MONTANA

Maurice Sanford Wessell, Major, Hamilton.

NEBRASKA

Loren Otis Bohnen, 1st Lieut., Omaha.
John W. Kelley, 1st Lieut., Omaha.

NEVADA

John Riley McDaniel Jr., Captain, Las Vegas.

NEW JERSEY

Charles Francis Baldini Jr., 1st Lieut., Jersey City.
Richard Ollendorff Bauman, 1st Lieut., Newark.
Eugene Aulbert Bekampis, 1st Lieut., Camden.
Matthew E. Boylan, 1st Lieut., Jersey City.
Edward Walter Chudzik, 1st Lieut., Lyndhurst.
Jack Edward Cox, 1st Lieut., Camden.
Charles Richard D'Amto, 1st Lieut., East Rutherford.
Henry Dantzig, 1st Lieut., Trenton.
William Nickles Eames, 1st Lieut., Trenton.
Norman Wallace Gordon, 1st Lieut., Elizabeth.
Bruce MacLean Hogg, Major, East Orange.
Thomas W. Howell, Major, East Orange.
Dabney Von K. Moon, Captain, Plainfield.
John Kline Nevius Jr., 1st Lieut., Plainfield.
James John Nobile, 1st Lieut., Hoboken.
Bertram Jacob Lyons Sauerbrunn, 1st Lieut., Elizabeth.
Leland Munyan Stetser, 1st Lieut., Collingswood.
Albert Wilson Van Sickle, 1st Lieut., Chester.

NEW MEXICO

Ulysses Steve Marshall, 1st Lieut., Roswell.

NEW YORK

Francis Folsom Baker, 1st Lieut., Rochester.
Scott Livermore Bennett, 1st Lieut., Brooklyn.
Hobert Meredith Berry, 1st Lieut., New York.
Hugh Edward Conly, 1st Lieut., Brooklyn.
William Hynes Conway, 1st Lieut., Larchmont.
Timothy Leonard Curran, 1st Lieut., Brooklyn.
Joseph A. D'Errico Jr., Major, North Tonawanda.
William Fredk. Doncy, 1st Lieut., Rochester.
Philip Walter Dorsey, 1st Lieut., Binghamton.
William Joseph Eisenmenger, 1st Lieut., New York.
Joseph Wm. Finn, 1st Lieut., Brooklyn.
James Stuart Fleming, 1st Lieut., Salamanca.
Raymond Harold Gehl, 1st Lieut., Brooklyn.
Thomas Joseph Gilligan Jr., 1st Lieut., New York.
John Tetard Goodner, 1st Lieut., New York.
Edwin Harry Heller, 1st Lieut., East Hampton.
Joseph William Hewett, 1st Lieut., Buffalo.
Patrick Henry Hoey, Captain, Searsdale.
Francis Paul Keefe, 1st Lieut., Olean.
Alfred Lachterman, 1st Lieut., Brooklyn.
Sanford Levine, 1st Lieut., Brooklyn
Benedetto A. Lobalbo, 1st Lieut., Staten Island.
William Benedict MacGuire Jr., 1st Lieut., Brooklyn.
Morris Louis Miller, 1st Lieut., Brooklyn.
Charles Howard Mortimer, 1st Lieut., New York.
Leo John Murphy, 1st Lieut., Olean.
Elliot Arthur Ornstein, 1st Lieut., New York.
William Clarke Quinn, 1st Lieut., New York.
Arland DeMont Ryan, 1st Lieut., Sodus.
Samuel David Spatt, 1st Lieut., Brooklyn.
William Allan Stewart, 1st Lieut., Watervliet.
Norbert Paul Sullivan, Major, Jackson Heights.
Henry John Vomacka, 1st Lieut., New York.
Roland John Walker, Captain, Auburn.

OHIO

Russell K. Ameter, 1st Lieut., Bryan.
Alfred K. Bard, 1st Lieut., Cleveland.
Robert Addison Bruce, 1st Lieut., Dayton.
Clayton Wayne Clark, 1st Lieut., Cleveland.
Sidney Weiss Durschlag, 1st Lieut., Cleveland.
John Mackay Hamilton, Captain, Cleveland.
A. Morton Karlan, Captain, Springfield.
Elmer Edward Ellsworth McClelland, Captain, Bellaire.
Robert Douglas Mansfield, Major, Canton.
John Edward Martin, 1st Lieut., Columbus.
Louis George Ralston, 1st Lieut., Youngstown.
Edward William Sanders, 1st Lieut., Bellevue.
Paul A. Stoodt, Major, Mansfield.
Kenneth Lynne Stratton, 1st Lieut., Portsmouth.
Edwin Rathven Westbrook, 1st Lieut., Warren.
Joseph F. Hattenbach, 1st Lieut., Cleveland.
Samuel J. Klatman, 1st Lieut., Youngstown.

OKLAHOMA

James Winston Beattie, 1st Lieut., Oklahoma City.
Francis John Daugherty, 1st Lieut., Oklahoma City.

OREGON

Louis J. Feves, 1st Lieut., Pendleton.
Frank LeCocq Jr., 1st Lieut., Portland.

PENNSYLVANIA

William Robert A. Boben, Captain, Wilkes-Barre.
Ralph Cantafio, 1st Lieut., Philadelphia.
Joseph Chervinko, Captain, Farrell.
Joseph Paul Chollak, 1st Lieut., Edwardsville.
Gilbert N. Clime, 1st Lieut., Lancaster.
William Richard Crosby, 1st Lieut., Philadelphia.
Hugh Meyers Crumay, 1st Lieut., Mercer.
John Wood Gordon Jr., Captain, Belle Vernon.
Warren Elmer Hartman, 1st Lieut., Bradford.
James Daniel Heller, 1st Lieut., Coplay.
John David High, 1st Lieut., Williamsport.
Henry John Kehrli, 1st Lieut., Scranton.
Willis Barr McClelland, 1st Lieut., Franklin.
Charles Christian Montgomery, 1st Lieut., Wilkes-Barre.
Walter Edward Naugler, 1st Lieut., Philadelphia.
Joseph Louis Nocentini, Captain, Philadelphia.
William S. Piper, 1st Lieut., Clearfield.
Luke Kinsel Remley, 1st Lieut., York.
William F. Sheeley, 1st Lieut., Pittsburgh.
Ralph Chadwick Worrell, 1st Lieut., Springtown.
Ralph Maynard Wymer, 1st Lieut., Pittsburgh.

SOUTH CAROLINA

William Spinks Bethea, 1st Lieut., Latta.
Richard B. Josey, 1st Lieut., Columbia.
Edwin Roy McCoy, 1st Lieut., Charleston.
Lane E. Mays, 1st Lieut., Greenville.
William Gordon Morehouse, 1st Lieut., Columbia.

TENNESSEE

William Ross Casey, 1st Lieut., Memphis.
Thomas Bentley Stone, 1st Lieut., Nashville.

TEXAS

Daniel D. Altgelt, Captain, San Antonio.
John Hodge Arrington Jr., Captain, Wichita Falls.
Mathew DeVore Burnett Jr., 1st Lieut., Houston.
Jesse Lantham Coleman, 1st Lieut., Houston.
Robert Francis Gossett, 1st Lieut., San Antonio.
Theodore R. Hannon, Major, Houston.
DeWitt H. Hotchkiss Jr., Major, Houston.
Paul Katribe, 1st Lieut., Houston.
Edward P. Leeper, Major, Dallas.
Philip Magrish, Captain, San Antonio.
Harl D. Mansur Jr., Captain, San Antonio.
Wayne Reeser, 1st Lieut., Lubbock.
John B. Stewart, 1st Lieut., Dallas.
John Howard Strickland, 1st Lieut., Alice.
Samuel Tenney, 1st Lieut., Marshall.
Robert W. Wells, 1st Lieut., Edna.
Edward Albert Wilkerson, Major, Houston.

VERMONT

Geoffrey Paul Wiedeman, 1st Lieut., Burlington.
Harry Yoringer Twiss, 1st Lieut., Montpelier.
Burnett Sheldon Rawson, 1st Lieut., North Williston.
James Francis Higgins, 1st Lieut., Barre.

VIRGINIA

Milton Hamlin Bland, 1st Lieut., Norfolk.
James Thomas Gianoulis, 1st Lieut., Richmond.
Leslie Mac Lisle Jr., 1st Lieut., Alexandria.
Don Preston Peters Jr., 1st Lieut., Lynchburg.
Richard Chute Potter Jr., Captain, Marion.
Dennis Hardesty Robinson, 1st Lieut., Bedford.
James Trabue Rountree, Captain, Harrisonburg.
Clarry Clyde Trice, 1st Lieut., Richmond.
Harold Brown Webb, Captain, Waynesboro.

WASHINGTON

LeRoy Judson Ayers, Captain, Seattle.
Jack Lynn Boyd, 1st Lieut., Seattle.
Kenneth Richard Drewelow, 1st Lieut., Kirkland.
Lowell Ladd Eddy, 1st Lieut., Seattle.
Arthur Lee Foley, 1st Lieut., Seattle.
George Kenneth Moore, 1st Lieut., Everett.

WEST VIRGINIA

Claude Lacy Houck, 1st Lieut., Carbon.

WISCONSIN

James S. Feurig, 1st Lieut., Seymour.
Adrian William Frankow, 1st Lieut., West Bend.
Urquhart Louis Meeter, Captain, Medford.
Harry Lloyd Schwartz, 1st Lieut., Kenosha.

CANADA

John Carlin Haley, 1st Lieut., Montreal.

NAVY

VENEREAL DISEASE DROPS TO NEW LOW

Venereal disease rates in the Navy have dropped to new all time lows, a special subcommittee of the National Advisory Police Committee on Social Protection was told on April 2 by Comdr. T. J. Carter, who is in charge of preventive medicine in the Bureau of Medicine and Surgery. Sick list admissions last year in the entire Navy, ashore and afloat, due to syphilis, gonorrhea and the lesser venereal infections totaled 36 per thousand men, a decrease of 29 per cent from 1941 and of 55 per cent since 1940. "During 1942, only 28 per cent of the Navy's venereal disease problem came from foreign ports," Commander Carter revealed. While this proportion, and the total number of cases, may increase in the near future, the fact remains that the bulk of the problem will remain in the United States for some time. It is particularly important, he said, from the point of view of civilian control, that communities in or around which there are naval activities appreciate the degree to which they are involved in the total Navy problem.

AWARDS TO NAVAL MEDICAL OFFICERS

The Bureau of Medicine and Surgery, U. S. Navy, Washington, D. C., announced in its March 1 weekly news the award on February 22 of the Purple Heart to Comdr. B. W. Hogan (M. C.) of the aircraft carrier *Wasp* and to Lieut. G. H. McAteer (M. C.) of the aircraft carrier *Hornet*. The bureau announced also in its February 15 issue of the weekly news the award of the Navy Cross on February 11 to Lieut. Edward P. McLarney of the Medical Corps for bravery in action in the Solomon Islands. Lieutenant McLarney is a native of Washington, D. C., where he practiced medicine after graduating from Georgetown University until he entered the Navy in 1937. The citation was as follows: "During the night action of December 13-14, when prepared to move his first aid station after the enemy advance made it unsafe, many wounded arrived for treatment. He coolly disregarded hostile fire from front and flank and, assisted by a greatly reduced number of hospital corpsmen, rendered aid to approximately 200 casualties during the engagement."

DENTAL OFFICERS PROMOTED TO NAVY CAPTAINS

Comdr. C. Raymond Wells, chief dental officer of the Selective Service System, Washington, D. C., and president-elect of the American Dental Association, and Comdr. Frederick F. Molt of the Great Lakes Naval Training Station in Illinois have been promoted to the rank of captain in the Navy. According to the *Military Surgeon*, both officers have served with distinction in many positions in military and in professional life. This is the first time, it is said, that two members of the dental corps reserve have been promoted to the rank of captain in the U. S. Navy.

REST HOME FOR TORPEDOED SEAMEN

A rest home for torpedoed seamen was opened on a beautiful site at Camp Kittiwake, Pass Christian, Miss., January 11. Participating in the ceremony were George H. Terriberry, chairman of the New Orleans Port Area Committee, United Seamen's Service, and Capt. Roger J. O'Sullivan, regional representative, Recruitment and Manning Organization, War Shipping Administration. The speaker was Mr. Marshall E. Dimock, director of Recruitment and Manning Organization. The home is for the purpose of giving torpedoed seamen an opportunity of recovering from the psychic trauma resulting from experiences following the torpedoing of their ship at sea and is intended to provide them with a period of complete rest and relaxation.

SHIPS NAMED AFTER FAMOUS MEDICAL MEN

In recent months the merchant marine has honored the small group of medical men who in its earlier years made Johns Hopkins University famous throughout the world by naming new Liberty ships the *William Osler*, the *William Welch*, the *William S. Halsted*, the *Howard A. Kelly*, the *John J. Abel* and the *Franklin P. Mall*. The Maritime Commission has a committee whose duty it is to name the new ships and that committee is free to honor thus any Americans it deems worthy of recognition for services to their country and to humanity.

FOOD RESEARCH SECTION

The Bureau of Supplies and Accounts of the Navy has established a Food Research Section in its Subsistence Division in order to accentuate the efforts of the Navy to improve the nutritional value and quality of the navy ration. Food chemists and technologists, both commissioned and civilian, who are experts in food research, will comprise the staff of the new section. The officer in charge will be Lieut. Comdr. Arthur J. Harrimann, SC, U.S.N.R., formerly chief of the Import Section, Office of Civilian Supply, War Production Board.

INSTRUCTION IN THE SPECIALTIES

Fifteen regular and reserve naval medical officers were assigned recently to duty under instruction in roentgenology and radiology at major naval hospitals. Ten medical officers are under instruction in anesthesia at the Mayo Clinic, Rochester, Minn., and six officers at the Lahey Clinic, Boston. On completion of these courses these officers will be assigned to continental and mobile hospitals.

NAVY PERSONALS

Several West Virginia physicians now in the Navy are members of the staff of the U. S. Naval Hospital at Quantico, Va. Comdr. W. M. Sheppe, formerly of Wheeling, who has been serving as chief of medicine of the Naval Medical Specialists Unit No. 40, has been promoted to the rank of captain, U. S. N. R. Captain Sheppe is an associate editor of the *West Virginia Medical Journal*. Lieut. Comdr. H. G. Little of Wheeling, who is in charge of the laboratories, has been promoted to the rank of commander. Lieut. Comdr. Russel Kessel of Charleston is chief of surgery. Lieut. Comdr. James K. Stewart of Wheeling is director of the eye, ear, nose and throat department and Lieut. A. L. Osterman of Wheeling is neuropsychiatrist. Capt. John Brewster of Weston, who has been in the naval medical corps for some years, is executive officer.

LIEUTENANT BATES MISSING

Lieut. John H. Bates M. C., U. S. Naval Reserve, formerly of New Preston, Conn., has been reported missing in action since a destroyer on which he was serving was lost, February 1. Dr. Bates graduated at Yale University School of Medicine, New Haven, in 1941 and was commissioned lieutenant in the U. S. Naval Reserve. He reported for active duty about July 15, 1942.

WOMEN PHYSICIANS

Six lieutenants (jg) W-V(S), U.S.N.R., who are physicians, will graduate from the basic course of instruction at the Naval Medical Center, Bethesda, Md., on April 27 and will be assigned to duty at the Naval Training School, Women's Reserve, the Bronx, New York.

CIVILIAN DEFENSE

GUARDING MILITARY INFORMATION

The United States government is engaged in an intensive campaign to impress on the public the importance of guarding information of a military nature. Beginning in April, booklets containing personal messages from Admiral King, General Marshall and J. Edgar Hoover on this subject will be distributed through the facilities of the Office of Civilian Defense to the immediate families of men in the armed services. It is vital that every one observe the rule of not talking about any information of a confidential nature which one may possess.

EMERGENCY MOBILIZATION OF MOTOR VEHICLES

The Office of Civilian Defense, Washington, D. C., issued on March 3 Operations Letter No. 114, defining the functions of regional, state and local transport officers and clarifying the relations of transport officers recommended in Operations Letter No. 86 with the Office of Defense Transportation and the American Red Cross under plans made for the mobilization of commercial motor vehicles to serve local citizens' defense corps. This letter states that the Office of Defense Transportation has the right of jurisdiction over all domestic transportation, including commercial motor vehicle equipment, and in the war effort may allocate its use in the most effectual manner.

By joint action of the Office of Defense Transportation and the Office of Civilian Defense, concurred in by the War and Navy departments, a plan for the mobilization of commercial vehicles to serve the War and Navy departments and local citizens' defense corps has been consummated, under which all local commercial motor vehicles, except organized motor transport companies, are now available immediately to the transport officer of each citizens' defense corps for local service in case of war emergency without application to the Office of Defense Transportation. Also, under this plan, all transport facilities required for civilian service outside the local area will be provided by the Office of Defense Transportation on request of the commander of the local citizens' defense corps. Among such outside transport service is that for evacuation of civilians, for reinforcement of distant communities, for transfer of injured persons to emergency base hospitals in other cities or areas and for transportation of emergency civilian supplies between communities.

PASADENA REORGANIZES EMERGENCY MEDICAL SERVICE

The civilian defense councils cooperating with the Red Cross have reorganized the emergency medical services in Pasadena and Altadena, Calif. The revised plan fits into the county setup. Instead of having seventeen casualty stations as dispatching centers for medical teams, now there are only six in the combined area. These teams comprise a physician, a nurse, several corps men, an ambulance and a squad car, to be dispatched from six base hospitals in Pasadena and one in Altadena. Dr. Leroy B. Sherry, chief medical officer of Pasadena, Dr. Paul Kinney, chief physician-inspector of the Pasadena schools, Dr. H. W. Benjamin of the Altadena Defense Council and others cooperated in the revision of the emergency medical service plans.

LIST OF PUBLICATIONS

The Office of Civilian Defense, Washington, D. C., announced on March 17 the first revision of its official list of Office of Civilian Defense publications and posters for the use of leaders in local defense councils. There is no charge for this list when it is used for this purpose; however, individuals not engaged in civilian defense who wish to secure these publications may purchase them from the Superintendent of Documents, Washington, D. C., which is the only agency authorized to sell federal publications.

MISCELLANEOUS

RUSSIAN WAR RELIEF, INC.

This relief agency, with headquarters at 11 East 35th Street, New York City, telephone Murray Hill 6-3203, has issued an appeal pointing out that the Russian medical profession is in dire need of medical supplies and surgical instruments to care for the wounded and the refugees. The appeal is made to the American people for contributions in kind rather than primarily in cash. Russian War Relief, Inc., has issued a lengthy official Russian list of medicines, laboratory and hospital supplies, drugs and surgical instruments which are particularly needed. Among the items are various kinds of surgical forceps, needle holders, scissors, knives, retractors, saws, elevators, autoclaves, trial lens sets, transfusion needles, spinal needles, rubber sheeting, surgeon's gloves, tourniquets, ice bags, sulfanilamide, caffeine, procaine and digitalis.

PREFERENCE RATINGS TO REPAIR REFRIGERATION SYSTEMS

The War Production Board has amended preference rating order P-126 for the purpose of facilitating the acquisition of material for the emergency repair servicing of industrial and commercial refrigerating or air conditioning systems. Preference ratings are assigned to deliveries of such material on the terms and conditions set forth in the amendment to the order. Among other things under class I for the assignment of preference ratings are the processing, transportation or storage of food and dairy products for the Army or Navy of the United States, the United States Maritime Commission or the War Shipping Administration, and under class II the order relates to deliveries of material for emergency repair service for any system on which depends, among other things, (i) "the continued operations of a plant engaged in industrial or commercial processing of food or food products (not including the processing of dairy products on a farm) and (ii) the preservation of blood plasma, pharmaceuticals or foods in a hospital and the transportation or storage of food and dairy products, except in establishments selling or serving food at retail, and except for domestic storage."

FUNDS FOR PURCHASE OF FOREIGN BODY LOCATORS

The junior members of the National Society Daughters of the American Revolution have presented a check for $1,400 to the Bureau of Medicine and Surgery of the Navy for the purchase of instruments to aid in the location of foreign bodies, known as the Berman Locator, which had previously proved its usefulness in locating embedded foreign bodies and detecting their subsurface depth. The instrument is sensitive, according to the Navy Department, not only to iron and steel but also to silver, copper, aluminum and other metals. The check was presented by Mrs. Hansel D. Wilson of Grosse Pointe, Mich., and Mrs. George D. Schermerhorn of Detroit to Rear Admiral Ross T. McIntire, Surgeon General of the Navy, who expressed appreciation of the organization's efforts in sponsoring the project.

AMBULANCES PRESENTED TO THE GOVERNMENT

The Pythian Sisters, Grand Temple of Maryland, conducted a campaign for funds with which five field ambulances were purchased and presented to the United States government in a ceremony at Baltimore on February 13. The Grand Chief of the Maryland branch of this society, Mrs. Pearl E. Klein, who was the leader in the campaign for funds, turned the keys of the ambulances over to Col. Frank P. Strome of the Army Medical Corps, representing the Third Service Command. Major Howard W. Jackson made the speech of presentation.

PUBLIC HEALTH UNDER HITLER

According to the *Kaiener Zeitung* of Nov. 16, 1942, speculation and illegal trading in medicines had assumed large proportions in Vilna. A number of medicines, including oils of ether, morphine and anesthetics, especially those used for wounded soldiers, have become scarce. The district commissioner reviewed the situation and anticipated in the near future a large collection of medicaments for Germany. The local herb market was widely known and had formerly supplied Germany to a great extent with medicinal herbs. The peasants should cultivate gardens in order to increase production of these plants.

Aftontidningen, Stockholm, of Nov. 17, 1942 reports from Oslo that 600,000 liters of cod liver oil was sent from Norway to Germany during September and October. It is estimated that more than 14,000 tons of cod liver oil has been exported to Germany since April 1941. During the whole period of occupation cod liver oil has been a valuable help to the civilian population, but stocks are now so reduced that only expectant mothers and children can get 1 teaspoon daily.

As stated in the *Klinische Zeitung* of Nov. 25, 1942, at a meeting of the Cologne Society for Anthropology, Dozent Dr. Bauermeister of the University of Cologne spoke on genetic-biologic tests to determine parentage. Last year in the Cologne Institute alone about 3,000 people were examined. Here the foundations for a race biology of the Rhineland were laid. An examination of similarities between parents and child, the decisive factor in the determination of parentage, is made by comparing three to four thousand hereditary characteristics, which are recorded either by photography or by drawing. As a rule the mother-child relationship does not need any examination; it is rather the search for the father which is the object of all investigations. The less similarity a child has to its mother, the more certain will be the verdict as to the father. In 1,200 cases examined in Cologne the proportion of cases in which science was not able to pronounce a verdict was 4 per cent, the number of absolutely certain cases against which even an oath could be disregarded was 5 per cent, the number of probable cases was 15 per cent, the number of very probable ones was 55 per cent and the number of most probable cases was 21 per cent. The speaker pointed out that the damage which would result if this question of parentage was to be left undecided would be much greater than the harm done in a case in which a wrong decision is made. Such cases are rare. At a time like the present, when millions of foreigners are working in the reich, genetic-biologic control is of an importance which could not be overrated.

A review of what has been done for young and expectant mothers is given in Le Pays *Reel* of Nov. 28, 1942. It states: "From the fourth until the sixth month of pregnancy, expectant mothers can get an extra ration of 14 bread coupons and 24 milk coupons per rationing period. Later until the birth they get an extra 14 bread coupons, 14 meat coupons and 30 milk coupons for each rationing period. The same rations can be had by young mothers for a period of two months after the birth of a child. After that they are entitled to only 30 milk coupons. From the fourth until the sixth month after the birth they can get 12 milk coupons per rationing period. The young and expectant mother will also get an egg card. This card will be valid six months before and six months after the birth. One egg a week is to be had on this card. The baby itself gets—apart from the normal rations—26 milk coupons per rationing period.

"Special regulations have also been issued for textile articles for both mothers and babies. Some people have doubted the value of these coupons because they said that one could not purchase the articles. We have learned, however, that all the articles can be bought without difficulty. There were some difficulties only with diapers, but this condition has improved since special shops have been appointed for the sale of these.

"Young mothers get an extra textile card containing 150 points and coupons for special articles such as bed covers, provided the birth of the child takes place at least three years after the previous child."

According to *Stefani* of Dec. 19, 1942 the cabinet has decreed the civil mobilization of doctors and pharmacists and, in general, of all persons carrying out health services.

DNB of Dec. 18, 1942 reports that following an agreement between the reich leader of the DAF, Ley, and the reich health leader, Conti, the health office of the DAF and the Association of German Panel Doctors have arranged for the district doctors to hold consulting hours in armament factories, supplementing the medical service provided by the works themselves. Thus armament workers will be able to undergo medical treatment in the works without having to waste time by going to the doctor and waiting there. Loss of working hours and output will thus be avoided. As a rule the works doctor will act for the district doctor, and the worker who has been certified as unfit for work will continue to be treated by his panel doctor.

Klinische Wochenschrift, Berlin, Dec. 5, 1942, reports from the *Deutsche Militararzt*, 1942, that German soldiers who have been sent to hygienically backward countries where the incidence of syphilis is high sometimes acquire extragenital syphilitic infections through the use of dirty and contaminated eating and drinking utensils.

According to *Kis Ujsdg* of Dec. 20, 1942 the minister of education has, in agreement with the university authorities, reduced the period of study for medical students by one year. This has been done in order to remedy the shortage of doctors.

The worst scarlet fever epidemic ever known is at present afflicting West Laaland, according to *Politiken* of Dec. 20, 1942. Entire families are being infected, and Maribo hospitals are overcrowded. The cases are often followed by complications, for instance kidney trouble and inflammation of the middle ear.

A recent edition of the *Petit Parisien* states that the services of the secretariat of state for health have been worried lately by a recrudescence of cases of venereal disease. To put a stop to this, measures will soon be taken by Dr. Grasset. Antivenereal disease clinics are to be modernized and their mechanism improved in coming months. Antepartum consultations and the examination of nursing infants will be supervised by specialists in order to prevent the development of hereditary syphilis. A decree is about to be signed by the marshal which will make it obligatory for any persons having contracted a venereal disease to undergo treatment in a clinic of their own choice or under their usual doctor. This obligation will imply a further measure, namely the declaration by the doctor of each new case of venereal disease observed by him. If the diseased person agrees to be treated normally, this declaration will remain anonymous. On the other hand, if the diseased person should either neglect or refuse to undergo treatment the doctor will be obliged to declare the name of the diseased to the sanitary authorities.

According to Transocean of Dec. 30, 1942 the sterilization of persons whose children are bound to be weak in body and mind has now been rendered possible in Norway by law, it was announced in Oslo on December 30. The law further provides for the sterilization of criminals if it is considered likely that they will repeat the same criminal actions. In all cases the decision lies with the director of public health.

Rome Radio of February 12 stated that in application of the laws on the control of citizens in time of war, the national labor service center has ordered the federal labor service centers to take a census of all doctors and to call up for checking purposes all male doctors born in 1914, 1915 and 1916. The doctors will present themselves, if resident in the capital of the province, at the federal labor service center and, if resident in other communes, at the respective labor service recruiting centers which are set up in each fascio. They must be provided with identity papers and make a written declaration containing all particulars asked. Those who fail without reasonable cause to present themselves at the labor service centers will be reported to the judicial authorities.

According to *Dagens Nyheter*, Stockholm, of February 5, the recent extremely difficult food situation has brought protective vaccination against tuberculosis into the limelight. A definite increase has not so far been observed in the number of cases, but from various parts of Norway more serious individual cases are reported; therefore preparations have been made for voluntary mass vaccination throughout Norway. The Norwegian National Union Against Tuberculosis voted a large amount for the purpose, and local unions are to supervise the campaign. Sufficient vaccine is available.

ORGANIZATION SECTION

REPORTS OF OFFICERS

NOTE.—At the 1925 session of the Association, the House of Delegates suggested that all reports of officers, committees, etc., and resolutions to be brought before the House, if available, be published in advance of the session so as to permit careful consideration and discussion.—Ed.

REPORT OF THE SECRETARY

To the Members of the House of Delegates of the American Medical Association:

The following annual report of the Secretary is respectfully submitted:

MEMBERSHIP

As of April 1, 1943 the official membership list of the American Medical Association carried 122,741 names. This number represents an increase of 2,040 over the number of members enrolled on the same date in 1941. The continuous growth of the Association's membership would seem to constitute a rather definite refutation of the charge sometimes made during the last few years to the effect that the Association has lost the support of a large part of the medical profession and that it does not officially represent the views and desires of the physicians of the nation. Such charges have emanated in most instances from sources entirely outside the profession itself. It is true that there are those within its own membership who are not wholly in accord with all its policies and who do not altogether approve some administrative methods, but that is a wholesome sign. Constructive criticism is helpful in any democratic organization, and it is a matter for congratulation and for thankfulness that the principle of free speech and independence of thought and individual conviction is still alive in the hearts and minds of our people, including the members of this Association.

It may be highly significant that within the last ten years the Association's membership has grown from 97,111 on April 1, 1933 to 122,741 on April 1, 1943 and in five years from 109,435 to the present number. The increase in membership is believed to be larger in proportion than the increase in the number of physicians resident in the United States.

In accordance with long established precedent, there appears as a part of this report a table designed to indicate the number of constituent associations and component societies, the number of physicians in each state and territory, the number of members in each major jurisdiction and other statistical data.

FELLOWSHIP

The number of names enrolled on the Fellowship roster as of April 1, 1943 was 72,851. The decrease of 896 from the enrolment on April 1, 1942 is explained by the fact that many Fellows called to active duty with the armed forces have resigned or have permitted their Fellowship to lapse because of uncertainties created by the war. However, a very considerable number of members have qualified as Fellows for the first time, and many of those who are now serving as medical officers have maintained Fellowship.

CANCELLATION OF ANNUAL SESSION

Because of conditions growing out of emergencies created by the war, the Board of Trustees, after thorough consideration of the many factors involved and by unanimous vote, decided that it would be advisable to cancel the annual session of the Association scheduled to be held in San Francisco in 1943. Announcement of this action was made several months ago, and the decision apparently has met with general approval.

Organization of Constituent State and Territorial Medical Associations, April 1, 1943

	Number of Counties in State	Number of Component Societies in State	No. of Counties in State Not Organized		No. of Physicians in State 17th Ed. A. M. Directory	No. of Members of State Associations		Number of Fellows in State
			1942	1943		1942	1943	
Alabama	67	67	..	..	2,123	1,564	1,595	621
Arizona	14	13	1	1	615	383	390	273
Arkansas	75	58	11	11	1,806	1,085	1,070	439
California	58	40	8	6	12,365	6,987	7,314	4,471
Colorado	63	27	1	1	1,886	1,179	1,151	732
Connecticut	8	8	..	..	2,729	1,843	1,937	1,121
Delaware	3	3	..	..	360	248	245	147
Dist. Columbia	..	..	..	..	4,540	898	924	669
Florida	67	33	17	17	2,391	1,397	1,429	758
Georgia	159	95	37	37	2,814	1,951	2,005	643
Idaho	44	9	..	..	446	321	320	168
Illinois	102	92	6	6	12,548	8,252	8,587	4,820
Indiana	92	83	1	1	4,165	3,262	3,344	1,939
Iowa	99	97	..	..	3,102	2,462	2,446	1,358
Kansas	105	70	17	18	2,042	1,580	1,560	948
Kentucky	120	113	3	3	2,717	1,887	1,886	814
Louisiana	64	42	15	15	2,691	1,547	1,551	772
Maine	16	15	..	..	1,011	756	751	381
Maryland	23	23	..	..	3,085	1,596	1,597	976
Massachusetts	14	18	..	..	8,085	5,416	5,542	3,128
Michigan	83	54	..	..	6,509	4,371	4,415	2,528
Minnesota	87	34	1	1	3,614	2,934	2,945	1,533
Mississippi	82	20	3	3	1,525	986	973	329
Missouri	114	77	8	8	5,183	3,279	3,254	2,029
Montana	56	17	21	22	556	442	436	252
Nebraska	93	50	16	16	1,637	1,150	1,147	679
Nevada	7	5	12	12	174	125	124	64
New Hampshire	10	10	..	..	687	539	546	291
New Jersey	21	21	..	..	6,038	4,211	4,178	2,663
New Mexico	31	14	17	17	447	281	272	153
New York	62	61	1	1	27,928	18,235	18,624	11,250
North Carolina	100	67	24	24	2,871	1,854	1,912	880
North Dakota	53	13	11	11	520	401	408	238
Ohio	88	87	1	1	9,406	6,668	6,783	4,397
Oklahoma	77	63	7	6	2,284	1,440	1,504	749
Oregon	36	25	2	2	1,493	906	932	524
Pennsylvania	67	60	6	6	15,503	9,769	9,922	6,117
Rhode Island	5	6	1	1	958	583	613	341
South Carolina	46	37	4	4	1,427	897	922	421
South Dakota	69	12	1	1	493	323	339	184
Tennessee	95	57	24	24	2,961	1,748	1,756	883
Texas	254	126	..	..	6,952	4,459	4,398	2,217
Utah	29	9	4	4	585	487	481	260
Vermont	14	10	3	3	551	393	385	199
Virginia	100	49	8	8	2,920	1,828	1,862	1,102
Washington	39	24	13	13	2,234	1,591	1,645	921
West Virginia	55	30	5	5	1,834	1,291	1,337	693
Wisconsin	71	52	..	..	3,551	2,569	2,587	1,521
Wyoming	24	11	11	11	263	192	195	114
Alaska	..	..	..	..	79	40	38	23
Hawaii	5	4	1	1	395	320	341	127
Isthmian Canal Zone	..	..	..	..	181	123	126	24
P. I. (Provinces)	56	28	30	28	4,209	1,250	1,247	42
Puerto Rico	7	7	..	..	526	402	450	75
Foreign	..	..	..	..	17	..	..	159
Total	3,139	2,046	352	349	185,903	120,701	122,741	69,051
Commissioned Medical Officers								3,800
								72,851

INSTALLATION OF THE PRESIDENT

While there will be no meetings of the Scientific Assembly in 1943, a general meeting will be held in the Ball Room of the Palmer House on the evening of Tuesday, June 8, at which the President-Elect, Dr. James E. Paullin, will be installed as President of the American Medical Association.

REAPPORTIONMENT OF DELEGATES

Section 3 of chapter I of the By-Laws of the Association, which provides for a reapportionment of delegates every third year, reads as follows:

SEC. 3. APPORTIONMENT OF DELEGATES.—At the annual session of 1925, and every third year thereafter, the House of Delegates shall appoint a committee of five on reapportionment, of which the Speaker and the Secretary shall be members. The committee shall apportion the delegates among the constituent associations in accordance with article 5, section 3, of the Constitution, and in proportion to the membership of each constituent association as recorded in the office of the Secretary of the American Medical Association on April 1 of the year in which the apportionment is made. This apportionment shall take effect at the next succeeding annual session and shall prevail until the next triennial apportionment, whether the membership of the constituent association shall increase or decrease. (As amended, 1925.)

The last apportionment was made at the annual session held in New York in 1940. A new apportionment is due to be made at this session of the House of Delegates.

The Judicial Council, complying with instructions of the House of Delegates and after careful study of the provisions of the Constitution pertaining to the organization of the House of Delegates and of the provisions of the By-Laws pertaining to the apportionment of delegates, submitted an official report to the House at the 1942 annual session. In this report the Council stated its conclusions and offered the recommendation

(1) that the Constitution, article 5, section 2, be amended to make delegates elected by the sections of the Scientific Assembly ex officio delegates without the right to vote; or, (2) because of the number of members of the Association now in government service and therefore unlikely to wield influence on their representation in this House of Delegates, that all action be postponed and the reapportionment in 1943 be made under the present constitutional provisions.

The part of the report of the Judicial Council pertaining to apportionment of delegates was referred to the Reference Committee on Sections and Section Work. In its report to the House the Reference Committee proposed an amendment to the Constitution, which is reproduced in the next section of this report of the Secretary. The Reference Committee also offered the following recommendation:

Since it is necessary for this amendment to lie over until the next annual session, your reference committee also recommends the adoption of the second or alternative recommendation of the Judicial Council that, because of the number of members of the Association now in government service and therefore unlikely to wield influence on their representatives in this House of Delegates, the reapportionment in 1943 be made under the present constitutional provisions.

The recommendation of the Reference Committee on Sections and Section Work was adopted by the House of Delegates.

PROPOSED AMENDMENT TO THE CONSTITUTION

The Reference Committee on Sections and Section Work submitted the following proposed amendment to the Constitution, article 5, section 2, to the House of Delegates at the annual session of the House held in 1942:

Amend article 5, section 2 of the Constitution by adding after the word "Councils" the words "and the delegates elected by these sections of the Scientific Assembly" so that the section reads as follows:

SEC. 2.—COMPOSITION.—The House of Delegates is composed of delegates elected by the constituent associations and by the sections of the Scientific Assembly, and of delegates from the Medical Departments of the Army and the Navy and the Public Health Service, appointed by the Surgeon General of the respective departments. The Trustees, the ex-Presidents of the Association, the members of the several Councils and the delegates elected by these sections of the Scientific Assembly shall be ex officio members of the House of Delegates without the right to vote, provided that members of the Councils who are also elected delegates may exercise all the rights of elected delegates.

In accordance with the provisions of the Constitution, this proposed amendment is respectfully presented.

CORRECTION OF THE MINUTES

On page 68 of the printed Proceedings of the House of Delegates the minutes of the 1942 session of the House are made to show that Dr. Arthur J. Bedell had signed the report of the Reference Committee on Sections and Section Work. The Secretary has been informed that Dr. Bedell did not attach his name to the report of the reference committee and wishes to have the minutes corrected accordingly.

ANNUAL CONFERENCE OF SECRETARIES AND EDITORS OF CONSTITUENT STATE MEDICAL ASSOCIATIONS

The Annual Conference of Secretaries and Editors of Constituent State Medical Associations was held in Chicago in November 1942. These conferences have been held annually for many years except when some emergency has arisen to prevent. On most occasions nearly all state secretaries and editors of state medical journals have attended, and a constantly increasing number of other officials of state and county medical societies have been present at each of the conferences in the last several years. Members of the Board of Trustees and of the Association's administrative personnel also attend.

The programs of the conferences held in 1941 and 1942 were largely given over to discussion of matters pertaining to war service, in which the Surgeon Generals of the Army, the Navy and the Public Health Service, the Director of the Selective Service System and the Federal Security Administrator, or their official representatives, have served as leaders. The Secretary is very sure that he expresses the sentiment of all members of the conferences in extending thanks to those officials who have so graciously and generously given of their time and effort to bring authentic and helpful information to the members of the conferences. Thanks are due also to others who have contributed to the conference programs and are herewith offered.

MEMORIALS AND RESOLUTIONS

Up to the time when this report is being prepared, no memorials or resolutions have been submitted to the Secretary for inclusion.

AND AGAIN

Even though it may be done in the same old words, the Secretary offers an expression of his heartfelt thanks and grateful appreciation for the many kindnesses extended to him by the members of the House of Delegates, by the officers and members of official bodies of the Association and of state and county medical societies and by those with whom he is associated in the Association's offices.

Respectfully submitted.

OLIN WEST, Secretary.

REPORT OF THE BOARD OF TRUSTEES

To the Members of the House of Delegates of the American Medical Association:

The following annual report of the Board of Trustees to the House of Delegates is respectfully submitted.

Participation in the War Effort

For more than two years the official and administrative personnel of the American Medical Association and of its councils, bureaus and departments have been actively engaged in efforts designed to contribute to the success of the nation's war program. Members of all the Councils, the members of the Board of Trustees and the administrative personnel in practically every department have served in various capacities on committees or commissions of official standing in Washington or in other ways have been directly concerned with one or another phase of the war effort and in some instances have devoted a large part of their time to such service. Official representatives of the Association have on numerous occasions been called on to participate in official conferences held in Washington and have attempted in that connection and in many other ways to be as helpful as possible to the federal government.

It has been necessary to make certain phases of the work of some departments secondary in order that the greatest possible contribution might be made toward the successful prosecution of the war. The number of male employees of the Association fully eligible for war service has been comparatively small. At the time of the preparation of this report thirty-five employees of the Association including members of its professional staff as well as workers in other capacities have been assigned to active duty with the military forces. Five young women of the Association's personnel have been assigned to duty with the Women's Army Auxiliary Corps, and others are contemplating entering on a similar service.

A suboffice of the Procurement and Assignment Service for Physicians, Dentists and Veterinarians was established some months ago in the headquarters of the Association and is now operating intensively under the direction of Lieut. Col. H. C. Lueth of the Medical Corps of the Army of the United States. Practically all persons engaged in this particular work are Civil Service employees. This suboffice is engaged in compiling material for the use of the Procurement and Assignment Service and for the use of the Army, Navy, Public Health Service and other government agencies that may wish to utilize such data and is otherwise pursuing activities designed to be helpful to the government, to the civilian population and to the medical profession as a whole in its relations to the war program.

Many official releases from various federal offices have been published in THE JOURNAL, and several large mailings of informational material have been made from the offices of the Association at the request of responsible officials of government departments.

Thousands of individual communications from physicians and laymen pertaining to medical service with the military forces or to conditions created by the world war have poured in to the Association's offices and, whenever possible and permissible, these communications have received careful attention and replies intended to be helpful to those concerned.

In order that the members of the House of Delegates may be informed as to the specific nature of some of the services that have been performed by officers, members of official bodies and the administrative personnel of the Association in connection with the war program of the federal government, the following information is offered:

The President of the American Medical Association, Brig. Gen. Fred W. Rankin, Medical Corps, Army of the United States, has been on active duty assigned to the Office of the Surgeon General in Washington for more than a year. The President-Elect, Dr. James E. Paullin, is a member of the Directing Board of the Procurement and Assignment Service for Physicians, Dentists and Veterinarians and is also a member of one or more committees of the Division of Medical Sciences of the National Research Council. Dr. Harvey B. Stone, a member of the Council on Medical Education and Hospitals, is a member of the Directing Board of the Procurement and Assignment Service. Members of the Council on Pharmacy and Chemistry, the Council on Physical Therapy, the Council on Foods and Nutrition and the Council on Industrial Health are members of important scientific committees working under government auspices in Washington, and some of them are serving in other capacities.

The executive officers of all the Councils and the Directors of all the Bureaus of the Association have attempted whenever opportunity has offered to be helpful to government departments and bureaus in various matters pertaining to war service. Dr. Paul C. Barton, Director of the Bureau of Investigation and assistant to the Secretary, has been on duty in Washington for about four months. In compliance with requests received from several official agencies of the government, the facilities of the Association have been used for the purpose of distributing rather large quantities of informative material.

Under the direction of the Editor of THE JOURNAL, a scientific news letter is prepared every two weeks, which is sent under the auspices of the Committee on Information of the Division of Medical Sciences of the National Research Council to medical officers of the Army, Navy and Public Health Service. For the Navy, this material is incorporated in a fortnightly letter issued under the title "Bumed," and this letter, in accordance with a special request, is being sent also to the air force of the Canadian army and is issued to the medical officers of that force. The Editor of THE JOURNAL also serves as consultant to various offices and committees in Washington and is a member of a committee on drugs and medical supplies of the Division of Medical Sciences of the National Research Council and vice chairman of the Medical Committee of Civilian Defense for the City of Chicago.

The Library of the Association, with the cooperation of the Editorial Department, has assembled material relating to health conditions in various parts of the world for a division of the medical department of the U. S. Army. Through the Current Medical Literature Department bibliographies and abstracts concerned especially with problems of military medicine have been prepared and submitted to federal agencies. From these abstracts collective reports and reviews are prepared which are published subsequently in WAR MEDICINE. A member of the editorial staff has directed the preparation of abstracts issued fortnightly covering progress in medical science for an important government office, and these abstracts are circulated in mimeographed form by that office in a manner that makes the material available in many parts of the world. Some of this material has been republished in periodicals in several countries. The director of the Department of Press Relations is serving as a member of committees or subcommittees of official government agencies in Washington and in somewhat similar capacity for the Emergency Medical Services of the Office of Civilian Defense in Chicago.

The Association has attempted to make the greatest possible contribution toward the winning of the war, and the Board of Trustees has authorized the active participation of the Association's administrative personnel in efforts designed to accomplish that end. In extending such cooperation to the government, the Association has received most valuable aid from government officials and desires to express its grateful appreciation of many courtesies graciously extended and for valuable assistance and cordial cooperation offered by those officials.

Income and Expenditures

It was expected that during the period covered by this report the income of the Association would be adversely affected by conditions growing out of the prosecution of the war, but such expectations were not realized. In accordance with long established precedent, the Report of the Treasurer and the Report of the Auditor for the year ended Dec. 31, 1942 are submitted as a part of this report of the Board of Trustees.

Gross income from all sources for the fiscal year covered by this report amounted to $1,975,236.30, an increase of $36,108.91 over the amount of gross income as reported for the year ended Dec. 31, 1941. Total expenditures for the year ended Dec. 31, 1942 amounted to $1,644,820.96, a decrease of $70,958.79 from the total expenditures in the preceding year.

Income received from Fellowship dues and subscriptions amounted to $804,319.66, which exceeds the income received from the same source in 1941 by $8,859.18. It was stated in the report of the Board of Trustees submitted to the House of Delegates at the last annual session that income from Fellowship dues and subscriptions would in all probability be materially reduced in 1942, and it is gratifying indeed to be able to report to the House of Delegates that such receipts actually increased over comparable receipts for the preceding year.

Receipts from the sale of advertising space in THE JOURNAL amounted to $1,036,571.59, representing an increase of $26,717.63 over similar income for the year 1941.

The interest received on investments in 1942 amounted to $74,482.58 as compared with receipts from a similar source in 1941 of $77,424.09. There has been a continuous decrease in the amount of interest realized on the Association's investments during the past several years, explainable by the fact that interest rates and especially those applicable to many of the most dependable securities have been rather radically scaled downward and by the further fact that because of somewhat revolutionary changes in the issuance and distribution of such securities the difficulties involved in making satisfactory investments have been greatly intensified.

The net income for the year as shown in the Report of the Auditor, which appears as an appendix to this report, was $330,415.34, of which sum $74,482.58 represented interest on the Association's investments.

The cost of paper used in the publication of THE JOURNAL in 1942 was $262,682.14, representing an increase of $2,491.15 over a similar expenditure for the year 1941. The price of practically all the paper used by the Association has been considerably increased, but the full effect of such increase is not shown in this item of expense for 1942, partly because stock in hand at the end of the preceding year was used during the year covered by this report. Restrictions placed on the pro-

duction of paper and on the use of this material by publishers has made it necessary to reduce the size of some of the Association's publications and to resort to other procedures in order that the allotment made under the rulings of the War Production Board shall not be exceeded. Lighter weight paper stock will be used in THE JOURNAL and in HYGEIA wherever possible, and the amount of printed material on each page of the special journals will be increased by cutting down the page margins. It is possible that if the war continues over any considerable period of time and if certain conditions incident to the war are deepened rather than improved, additional restrictions may be placed on the production and distribution of paper used by publishers. There is also a possibility that the cost of paper will increase rather than diminish.

Expenditures for wages and salaries reported in THE JOURNAL account in the Report of the Auditor for the year ended Dec. 31, 1942 amounted to $548,302.57 as compared with similar expenditures in 1941 of $540,800.30. Because of higher living costs, it has been necessary to adjust the salary and wage scale, and further adjustments will have to be made. The total amount expended for wages and salaries in 1942 would have been somewhat larger except for the difficulties involved in maintaining adequate working personnel.

Expenditures incident to the operation of the various councils, bureaus and departments of the Association, including salaries and wages, amounted to $467,974.57 in 1942, an increase of $7,460.99 over similar expenditures in the preceding year.

Expenses under the heading Legal and Investigation Expense for 1942 amounted to $64,449.71 as compared with $119,183.19 in 1941. By far the larger part of expense incurred in this connection in 1941 was incident to the costs involved in the trial of the case of the United States of America versus the American Medical Association and the Medical Society of the District of Columbia et al. and in expenses involved in appeals to higher courts from the decision rendered by the trial court.

The Association's buildings and equipment have been well cared for, and special care has been taken to maintain in good working order all machinery used in the publication of periodicals or required for the maintenance of buildings. During the year the inside walls of the main building were repainted or otherwise refurbished.

The number of employees of the Association at the time of the preparation of this report was 561.

Summary

Gross income from all sources for the year 1942 amounted to $1,975,236.30, an increase of $36,108.91 over the preceding year. Total expenditures for the year were $1,644,820.96, which was less than the total expenditures during 1941 by the sum of $70,958.79. Income received from Fellowship dues and subscriptions amounted to $804,319.66, exceeding income from the same source in 1941 by $8,859.18. Receipts from the sale of advertising space in The Journal were $1,036,571.59, representing an increase of $26,717.63. Interest received on investments in 1942 amounted to $74,482.58 as compared with similar income in the preceding year of $77,424.09. There has been a continuous decrease during the past several years in the amount of interest realized from the Association's investments. Net income for 1942 was $330,415.34. The cost of paper used in the publication of The Journal amounted to $262,682.14 during the past year, an increase of $2,491.15 over similar expenditure in 1941. Expenditures for wages and salaries as reported in The Journal account for the year ended Dec. 31, 1942 were $548,302.57 as compared with expenditures on the same account in the preceding year of $540,800.30, and expenditures incident to the operation of the various councils, bureaus and departments of the Association, including salaries and wages, amounted to $467,974.57, an increase of $7,460.99 over similar expenditures in 1941. Legal and investigation expense for 1942 was $64,449.71 as compared with $119,183.19 in the preceding year. At the time of preparation of this report there were 561 persons in the employ of the Association.

The Journal of the American Medical Association

The impact of the war, including enrolment in the armed forces of more than 45,000 physicians, has been recognized by special consideration given in THE JOURNAL to problems of military medicine and to official announcements related to the war effort. The department of THE JOURNAL devoted to "Medicine and the War" has regularly published for the benefit of the medical profession the official announcements of the U. S. Army Medical Department, the Bureau of Medicine and Surgery of the Navy, the Office of Civilian Defense, the United States Public Health Service, the Office of War Information, and those sections of the government concerned with the control of foods, drugs and medical supplies. Each of these government agencies has acknowledged in written communications the service rendered by THE JOURNAL, as the voice of American medicine, in the coordination of the medical profession for the war effort.

In its editorials THE JOURNAL has aided the war effort by participation in the recruitment of physicians for the innumerable activities which they are called on to perform at this time.

The content of THE JOURNAL has been somewhat modified by the cancellation of many scientific medical meetings which used to be a source of scientific contributions. Nevertheless the prestige and the circulation of THE JOURNAL have served to make it first choice for submission of voluntary manuscripts, so that there is not a dearth of papers.

An arrangement has been made with the Council on Scientific Assembly and the officers of the scientific sections to prepare scientific programs just as if the annual session of 1943 were to be held. These manuscripts will then be submitted to a selected group of authorities, who will present written discussions, these in turn being submitted to the original authors for closing discussions. It is believed that this method of development of material will serve a most useful purpose in keeping readers of THE JOURNAL abreast of scientific advances during the war period.

The war continues to interfere seriously with the receipt of correspondence and medical periodicals from foreign countries. The arrangements that have been made to cooperate with the Latin American nations are gradually being perfected, so that correspondence is being received more frequently from our South American neighbors. Through arrangement with the government archives, microfilms of scientific periodicals published abroad will be received for abstracting in the periodicals of the Association and for indexing in the QUARTERLY CUMULATIVE INDEX MEDICUS.

The Organization Section of THE JOURNAL has served fully to inform the members and Fellows of the Association concerning the activities of various councils and official agencies of the Association and the work of the Board of Trustees and similar groups. Through this section also the reports of the Bureau of Legal Medicine and Legislation and of the Bureau of Medical Economics are given wide circulation.

Significant among the special articles published during 1942-1943 is the series on nutrition, developed under the auspices of the Council on Foods and Nutrition and planned ultimately for circulation as a book to be called "The Handbook of Nutrition."

THE JOURNAL is attempting to cooperate with the War Production Board in reducing the total amount of paper used during the year by 10 per cent. Conceivably the demands made on THE JOURNAL for the services it may render in the war effort may make it difficult to continue to comply with this demand. The situation has been placed before the representatives of the War Production Board.

There was a slight decrease, due entirely to war conditions, in the number of subscribers to THE JOURNAL during the year. On Dec. 31, 1942 there were 103,692 names on the mailing list of THE JOURNAL as compared with 104,003 names on the same date in the preceding year, a difference of 311. It is extremely interesting to note in this connection the loss in 1942 of 261 subscribers from the Philippines as well as a decided reduction in the total number of foreign subscribers.

The accompanying table 1 indicates the number of Fellows and subscribers on THE JOURNAL mailing list in each state and territory on Jan. 1, 1943 and also shows the number of Fellows and subscribers in other countries, the number of copies sent to advertisers and subscription agents and the number sent as

TABLE 1.—*Approximate Count of Fellows and Subscribers on The Journal Mailing List Jan. 1, 1943, Showing Gain or Loss*

State	Fellows	Subscribers	Totals	Gain	Loss
Alabama	640	353	993	111	...
Arizona	248	171	419	41	...
Arkansas	440	231	671	106	...
California	4,439	3,116	7,546	691	...
Colorado	676	355	1,031	76	...
Connecticut	1,029	645	1,674	...	38
Delaware	123	78	201	...	16
District of Columbia	721	643	1,364	129	...
Florida	946	558	1,504	193	...
Georgia	829	593	1,422	173	...
Idaho	154	97	251	11	...
Illinois	4,083	2,920	7,003	...	114
Indiana	1,569	674	2,243	...	87
Iowa	1,104	376	1,480	...	101
Kansas	795	338	1,133	...	14
Kentucky	760	452	1,212	66	...
Louisiana	819	532	1,351	82	...
Maine	349	160	509	...	17
Maryland	985	724	1,709	55	...
Massachusetts	2,797	1,604	4,401	...	102
Michigan	2,307	1,026	3,333	...	258
Minnesota	1,275	622	1,897	...	106
Mississippi	413	264	677	110	...
Missouri	1,734	928	2,662	27	...
Montana	198	89	287	...	16
Nebraska	586	249	835	...	4
Nevada	67	34	101	...	...
New Hampshire	270	109	379	...	14
New Jersey	2,480	1,279	3,759	...	263
New Mexico	156	109	265	31	...
New York	9,364	5,967	15,331	...	715
North Carolina	915	631	1,546	76	...
North Dakota	191	85	276	...	21
Ohio	3,477	1,564	5,041	...	196
Oklahoma	657	313	970	34	...
Oregon	501	371	872	93	...
Pennsylvania	5,485	2,602	8,087	...	194
Rhode Island	360	197	557	12	...
South Carolina	503	307	810	102	...
South Dakota	178	104	282	26	...
Tennessee	763	497	1,260	13	...
Texas	2,237	1,248	3,485	353	...
Utah	259	133	392	79	...
Vermont	178	69	247	...	12
Virginia	1,167	649	1,816	157	...
Washington	931	526	1,457	93	...
West Virginia	587	266	853	...	54
Wisconsin	1,323	642	1,965	19	...
Wyoming	110	48	158	...	4
U. S. Army	...	564	564	197	...
U. S. Navy	...	700	700	90	...
U. S. Public Health Service	...	104	104	5	...
Alaska	20	34	54	...	21
Canada	18	806	824	95	...
Cuba	7	243	250	53	...
Hawaii	131	104	235	...	12
Mexico	8	201	209	39	...
Panama	39	64	103	12	...
Philippine Islands	...	...	...	...	261
Puerto Rico	64	89	153	...	15
Virgin Islands	1	5	6	2	...
Foreign	62	1,855	1,917	...	921
Advertisers and agents	..	.....	388	...	69
Exchanges	..	.....	171	...	73
Complimentaries	..	.....	107	...	13
Total on mailing list			103,692	3,452	3,763

exchange or complimentary copies. The number of physicians in each state, based on the Seventeenth Edition of the American Medical Directory, the number of physicians in each state who receive THE JOURNAL and the approximate percentage of such physicians are shown in table 2.

The net paid weekly average circulation in 1942 was 101,993 as compared with 100,027 in 1941. The total number of copies of THE JOURNAL printed in 1942 was 5,417,360.

Summary

Throughout the year 1942 special consideration has been given in the columns of The Journal to problems of military medicine and to official announcements related to the war effort. Acknowledgment of the service rendered by The Journal has been received from many government agencies.

Although the content of The Journal has been somewhat modified because of the cancellation of scientific medical meetings which used to be a source of scientific contributions, The Journal apparently continues to be the first choice for submission of voluntary manuscripts.

A plan has been worked out with the cooperation of the Council on Scientific Assembly and the officers of the scientific sections whereby papers and discussions of them will be available for publication in The Journal during the coming year even though the regular annual session of the Association is not held.

The war continues to interfere seriously with the receipt of correspondence and medical periodicals from foreign countries, but cooperative arrangements are gradually being perfected with the Latin American countries, so that correspondence is being received more frequently from that source.

The Organization Section of The Journal continues to serve fully to inform the members and Fellows of the Association concerning Association activities.

It is conceivable that the demands made on The Journal for the services it may render in the prosecution of the war effort may make it difficult to continue to comply with the restrictions placed on the use of paper by the War Production Board, although up to this time there has been complete cooperation in this connection. The situation has been placed before representatives of the War Production Board.

TABLE 2.—*Percentage of Physicians Receiving The Journal* *

State	Number Receiving Journal	Physicians in A. M. A. Directory	Approximate Percentage Receiving Journal
Alabama	993	2,123	47
Arizona	419	615	68
Arkansas	671	1,806	37
California	7,546	12,765	61
Colorado	1,031	1,886	55
Connecticut	1,674	2,720	62
Delaware	201	360	56
District of Columbia	1,364	4,540	30
Florida	1,504	2,391	63
Georgia	1,422	2,814	51
Idaho	251	446	56
Illinois	7,003	12,548	56
Indiana	2,243	4,165	54
Iowa	1,480	3,102	48
Kansas	1,133	2,042	55
Kentucky	1,212	2,717	45
Louisiana	1,351	2,601	52
Maine	509	1,011	50
Maryland	1,709	3,085	55
Massachusetts	4,401	8,085	54
Michigan	3,333	6,309	54
Minnesota	1,897	3,614	52
Mississippi	677	1,525	44
Missouri	2,662	5,183	51
Montana	287	556	52
Nebraska	835	1,637	51
Nevada	101	174	58
New Hampshire	379	687	55
New Jersey	3,759	6,008	63
New Mexico	265	447	59
New York	15,331	27,928	55
North Carolina	1,546	2,871	53
North Dakota	276	520	53
Ohio	5,041	9,469	54
Oklahoma	970	2,284	42
Oregon	872	1,493	58
Pennsylvania	8,087	13,503	60
Rhode Island	557	958	58
South Carolina	810	1,427	57
South Dakota	282	493	57
Tennessee	1,260	2,961	43
Texas	3,485	6,932	50
Utah	392	585	67
Vermont	247	551	45
Virginia	1,816	2,920	62
Washington	1,457	2,214	65
West Virginia	853	1,834	47
Wisconsin	1,965	3,551	55
Wyoming	158	263	60

* This table gives the number of physicians (based on the Seventeenth Edition of the American Medical Directory) in the United States, the number receiving THE JOURNAL and the approximate percentage in each state. Copies to physicians in the United States Army, Navy and Public Health Service are not included.

There was a slight decrease, due entirely to war conditions, in the number of subscribers to The Journal in 1942. The net paid weekly average circulation during the year was 101,993, and the total number of copies of The Journal printed was 5,417,360.

Special Journals

Nine periodicals are included in the group of scientific publications of the Association generally referred to as the "special journals." They are the ARCHIVES OF INTERNAL MEDICINE, the ARCHIVES OF SURGERY, the AMERICAN JOURNAL OF DISEASES OF CHILDREN, the ARCHIVES OF OPHTHALMOLOGY, the ARCHIVES OF PATHOLOGY, the ARCHIVES OF NEUROLOGY AND PSYCHIATRY, the ARCHIVES OF OTOLARYNGOLOGY, the ARCHIVES OF DERMATOLOGY AND SYPHILOLOGY and WAR MEDICINE. Each of these journals deals with the special field of medicine indicated by its title, and each has its own editorial board elected by the Board of Trustees. The members of these boards devote a large amount of time and effort to their editorial duties, and the Association can well be proud of the products of their fine service. The contributions to the columns of these periodicals are of high quality, and each of the special journals has won recognition from specialists in many parts of the world.

The newest member of the group, WAR MEDICINE, has steadily gained favor. Its circulation in its second year increased over that of the preceding year by more than 33 per cent.

Certain special features of some of these journals, notably symposiums and reviews in the ARCHIVES OF SURGERY and reviews in the ARCHIVES OF INTERNAL MEDICINE, have attracted wide interest. The "Opie Number" of the ARCHIVES OF PATHOLOGY, published in July 1942, received high commendation.

Because of restrictions imposed by the federal government on paper supplies, it became necessary to reduce the number of pages in each of the special journals, but this deficiency was minimized to some extent by reducing the width of page margins and widening printed columns.

Five of the special journals were published at a loss of $16,027.96. Four produced income larger than the cost of publication by the sum of $11,182.63, these four being the AMERICAN JOURNAL OF DISEASES OF CHILDREN, the ARCHIVES OF OTOLARYNGOLOGY, the ARCHIVES OF OPHTHALMOLOGY and WAR MEDICINE.

Total circulation of the nine special journals in 1942 was 28,880 as compared with a circulation of 28,576 in 1941. However, four showed decreases, varying from 45 for the ARCHIVES OF OTOLARYNGOLOGY to 320 for the ARCHIVES OF INTERNAL MEDICINE. Gains in circulation were recorded for WAR MEDICINE, the ARCHIVES OF OPHTHALMOLOGY, the ARCHIVES OF DERMATOLOGY AND SYPHILOLOGY, the ARCHIVES OF NEUROLOGY AND PSYCHIATRY and the ARCHIVES OF PATHOLOGY.

Hygeia

The increasing success of HYGEIA is reflected in its circulation and its importance as a medium for the advertising of materials related to health. In some areas HYGEIA is relied on for providing collateral reading in courses of science in schools. Its feature articles and its editorials have had large circulation through repetition in the press. Outstanding as a part of its service in the war effort have been the special articles related to foods and nutrition, to industrial health and, particularly, to the health problems of women in industry. HYGEIA has served, moreover, to inform the public regarding the health aspects of military service.

The average net paid circulation of HYGEIA for the twelve months of the fiscal year was 111,021. In December 1942 the number of physicians on the subscription list was 15,017.

From a financial standpoint, 1942 was HYGEIA's best year. Substantial gains were recorded for both subscription and advertising income with the result that there was a net gain of $40,376.34 from the year's operations.

The Woman's Auxiliary to the American Medical Association has continued its interest in HYGEIA and has been very helpful in maintaining its circulation. A past president of the Auxiliary was instrumental in securing the renewal of more than 800 subscriptions to HYGEIA for use in junior and senior high schools in Pennsylvania.

Library

The Library of the American Medical Association distributed 2,466 library packages in 1942, approximately 20 per cent of which were sent to governmental agencies, including army and marine hospitals and naval training stations. Requests for library packages were received and filled from every state in the Union. While it has proved unpractical to extend the package service outside the continental United States, requests were received from Hawaii, Mexico and the Canal Zone and, owing to the urgency of the requests, service was extended to those points. Requests for subjects dealing with war and military medicine, including air raids and gas warfare, led all other requests for 1942. Other subjects popular in 1942 were aviation medicine, sulfanilamide, industrial medicine, heart disease, blood transfusion, treatment of burns and virus pneumonia.

During the year, 12,267 periodicals were sent out through the Library's periodical lending service, and approximately five thousand requests for references were received and filled.

Indexes for the three volumes of THE JOURNAL were prepared, as usual, in the Library.

Members of the Library staff assisted the Abstracting Department in the preparation of abstracts for members of committees of the National Research Council. The principal subjects covered were bacteriology of burns and wounds, blood substitutes, cardiovascular diseases, head injuries, healing of fractures, experimental malaria, malaria therapy, military psychiatry, peripheral nerve injuries, shock and thrombophlebitis.

Continuing the policy of maintaining only a ten year collection of periodicals, periodicals covering the year 1930 were distributed during the year to fifty-five libraries through the Medical Library Exchange.

The Employees' Library, which makes books and magazines available to employees of the Association for an annual fee of 50 cents, circulated 4,107 books in 1942.

Quarterly Cumulative Index Medicus

Because of conditions created by the global war, comparatively few publications from foreign countries have been available for indexing during the past two years. Only 13,424 articles from such publications were indexed in 1942, a large percentage of which were from Spanish and Portuguese journals, whereas in 1940 there were 26,614 such articles. It is expected that arrangements may be made in 1943 for indexing 1942 material in much larger amount.

The cost of publication of the INDEX MEDICUS for 1942, because of the dearth of material available for indexing, was greatly reduced and the loss sustained from its publication was considerably less than in previous years. Expenditures exceeded income from subscriptions and sales by the sum of $27,337.94 for the year 1942.

American Medical Directory

The preparation and publication of the Seventeenth Edition of the American Medical Directory was greatly delayed because thousands of physicians were assigned to duty with the military forces after the preliminary work was far advanced. It was necessary to make a great many changes in listings. Much time was lost also because of the difficulty encountered in maintaining adequate personnel. Because of the acute shortage of competent clerical help and of supplies, as well as because so many physicians are serving as medical officers, it is doubtful that it will be possible to publish another edition of the American Medical Directory at the regularly scheduled time in 1944.

The style of the Seventeenth Edition is practically the same as that of the previous edition. Symbols have been used to designate physicians serving with the military forces. The new Directory contains 201,272 names, as compared with 195,104 names in the Sixteenth Edition, and is larger by 122 pages.

The net loss for the Seventeenth Edition, as of Dec. 31, 1942, amounted to $12,338.66, a sum in excess of the loss on the previous edition by $3,399.40.

In common with practically every department of the Association, the Directory Department has cooperated to the fullest possible extent with the Procurement and Assignment Service

and has been of material aid to that service and to other branches of the federal government in supplying and checking information concerning many thousands of physicians.

Mailing and Order Department

The total number of pieces of outgoing first and third class mail handled through the Mailing Department in 1942 was 2,446,130, as compared with 2,582,248 in the previous year. For transmitting this mail, 4,177,739 envelops of all kinds were used. A large amount of first class mail was sent from the Association's offices during the year that was not handled through this department.

The Order Department handled 73,415 orders in 1942 involving the distribution of 355,309 items, an increase over the previous year of more than 1,400 orders.

The records of the Mailing and Order Department show that 5,946 mail bags containing 181.4 tons, an average weekly weight of 3½ tons, of second, third and fourth class mail were used. This tonnage does not include the mailing of current weekly and monthly issues of the Association's publications, which in 1942 amounted to approximately 3,160 tons, or a weekly average of 60.7 tons, involving the use of 125,182 mail bags during the year.

Cooperative Medical Advertising Bureau

The Cooperative Medical Advertising Bureau continued in 1942 to serve thirty-five of the official publications of constituent state medical associations.

Commissions earned by the Bureau during the year ended Dec. 31, 1942 amounted to $42,681.71, which represents the Bureau's most successful year. The expense incident to the operation of the Bureau was $14,751.55. Cash discounts allowed in excess of cash discounts received were $1,930.16, and commissions remitted to state journals at the end of the year in proportion to the total amount of advertising secured for each cooperating journal amounted to $26,000.

Press Relations

The increasing recognition resulting from the nation's war effort of the importance of health is reflected in the press relations activities of the Association, which are carried on under the supervision of the Editor of THE JOURNAL. Particularly important in the operations of this department during the past year was the extension of its information service through the medium of the AMERICAN MEDICAL ASSOCIATION NEWS to a large and constantly increasing number of house organs of industrial firms throughout the United States and Canada. The number of mediums through which the Association is reaching the farmers of the nation also was increased extensively during the year.

Typical of the comments being made about the public relations activities of the Association is the following statement, which appeared in an editorial in a recent issue of the *Michigan Legal Record:* "It isn't exactly illegal to besmirch the general character of the medical profession. But it just isn't done because facts are continually placed before the public concerning the activities carried on by physicians to better the public health. This barrage of information is supplied by the national organization of the profession and all down the line through the state and county society. . . ."

Although news space in the newspapers of the country is being drastically reduced because of the paper shortage due to the nation's war activities, the number of stories based on articles appearing in THE JOURNAL and HYGEIA during 1942 totaled more than eighty-three thousand, an increase of almost two thousand over the number in 1941. In addition, an increasing number of feature stories and editorials based on information furnished by the Association appeared in the daily press and in popular magazines. The use by radio stations of information furnished by the Association also continued to increase during the year.

The mailing list of the AMERICAN MEDICAL ASSOCIATION NEWS includes three hundred and nineteen daily newspapers, six papers on the mailing list having been suspended during the year, eighty-three news services, radio stations and miscellaneous publications, thirty-seven local and state health departments, fifty health and tuberculosis associations, seventy-nine county and local medical societies, fifty-three state and territorial medical societies, eighty-five national medical organizations, fifty-eight pharmaceutical companies and associations, sixty-four industrial organizations, nineteen educational institutions, twenty-four science writers and eighty miscellaneous publications and organizations. Fifty-five copies of the AMERICAN MEDICAL ASSOCIATION NEWS are sent weekly to various constituent state and territorial medical associations for distribution to small newspapers in their areas.

Indicative of the importance of the Association as a source of information was the fact that all the press associations and several of the nation's leading newspapers sent their science editors and reporters to cover the Atlantic City session. In some instances the papers sent more than one staff member to cover the session. A large number of stories pertaining to the Atlantic City session appeared prior to and during the meeting in the newspapers of Central and South America. These papers also are using throughout the year an increasing number of stories based on releases prepared by the Association.

The number of inquiries regarding various phases of medicine received in the Press Relations Department from newspapers, radio stations and other mediums of public information continued to increase in 1942. During the year these totaled more than three thousand eight hundred as compared with approximately three thousand one hundred in 1941 and two thousand in 1940. Inquiries pertaining to various medical phases of the war were responsible for a portion of this increase.

During 1942 the facilities of the Department of Press Relations were being used increasingly by various governmental agencies and other organizations, particularly in connection with the nation's war effort. This was particularly true in regard to matters pertaining to industrial health, to the procurement and assignment of physicians for the armed forces and to the nation's civilian medical needs. State and county medical societies continued to call on this department for assistance in their press relations programs. The medical news page appearing in HYGEIA each month is furnished by the Press Relations Department.

Council on Pharmacy and Chemistry

The Council on Pharmacy and Chemistry has completed thirty-eight years of service to the medical profession and to the public. During this time the Council has assumed ever increasing importance in the field of medicine until now it is truly considered one of the leading authorities on rational therapeutics. Its rules were adopted originally with the idea of protecting the medical profession and the public against fraud, undesirable secrecy and objectionable advertising in connection with proprietary medicinal articles. As time progressed the function of the Council was broadened, so that it now advises the medical profession concerning the status of medicinal articles the profession is importuned to use, publishes reports on claimed advances in the use of drugs and, with the aid of the Chemical Laboratory, elaborates standards for the control and identity of drugs that are introduced into materia medica. During 1942 the Council's observance of these principles and its leadership in medicine rose to a new peak.

CONTRIBUTION TO THE WAR EFFORT

The Council has contributed directly and indirectly to the prosecution of the war effort. It has provided information for physicians in private practice, in industry and in the armed forces, it has been of service to research centers, educational bodies and purchasing agencies and it has cooperated with governmental agencies, regulatory and advisory. The Council has supplied criteria for evaluating drugs to be used in industry and on the battle fields and information on therapeutic procedures, pharmacology, toxicology and the actions and uses of drugs and drug substitutes. Among the bodies with which the Council has maintained cooperative relationship are the Army, Navy, Public Health Service, War Production Board, Office of Emergency Management, Office of Price Administration,

National Research Council, National Safety Council, Office of Civilian Defense and American Red Cross.

Four members of the headquarters office personnel are on active service with the armed forces. One Council member is on active service abroad, and another has spent some months in an allied country conducting a special survey. Most of the Council members are on one or more special committees, in active or advisory capacities, of the central bodies which are directing the war effort.

GOOD WILL RELATIONS

During the year the Council on Pharmacy and Chemistry, representing the American Medical Association, and the American Pharmaceutical Association sponsored a meeting for discussion of subjects of common interest. The meeting was so well attended and successful that both bodies hope to participate in another conference at an appropriate time.

Cooperative relationships have been established, or furthered, with representatives of a number of foreign countries, including Canada, England, China, Mexico, Brazil, Ecuador, Peru, Venezuela and Russia.

PUBLICATIONS

During the year, revision of New and Nonofficial Remedies 1942, Useful Drugs and Epitome of the U. S. Pharmacopeia and National Formulary was completed, and the new editions will be available early in 1943. Fifteen thousand copies of the Council's publications, including New and Nonofficial Remedies, Useful Drugs, Epitome of the U. S. P. and N. F., Annual Reprint of the Reports of the Council and Glandular Physiology and Therapy were distributed. The figures for 1942 bring up to 380,000 the number of publications of the Council on Pharmacy and Chemistry which have been distributed over the last twenty year period. Included in this figure are 165,000 copies of New and Nonofficial Remedies, of which 75,000 have been complimentary paper bound copies issued to students in approved medical schools. Publications for which the Council is not solely responsible, such as the A. M. A. Intern's Manual and The Vitamins, are not included in these figures.

RESEARCH

A complete report of the Council's Committee on Therapeutic Research is included in the Addenda to the Report of the Board of Trustees. In brief, twenty-seven new grants were issued during 1942, making a total of sixty-seven grants which were still open at the end of the year. The number of grants that have been issued since the formation of this committee in 1911 is four hundred and ninety-three.

The Council is sponsoring status reports on preparations intended for the prevention and treatment of fungous infections and the treatment of Trichomonas vaginalis infections and of burns, on the antibacterial and anti-infective properties of soaps and commonly included ingredients, on the value of gas gangrene antitoxin and tetanus-gas gangrene antitoxin, on metrazol, on tissue stimulants for wound healing and on xanthine derivatives, digitalis and immunization against whooping cough. Some of these investigations have been completed and will be published soon.

EDUCATIONAL ACTIVITY AND OTHER WORK

During 1942 the Council adopted for publication forty-four reports consisting, in part, of statements of a general nature concerning the use of bulk ether in anesthesia, the status of sodium cacodylate, aminoacetic acid and the higher types of antipneumococcus serums, criteria for the evaluation of antibacterial agents and the proper use of vitamins in mixtures, and, in part, the status of compounds such as zinc peroxide, zephiran hydrochloride, bismuth ethyl camphorate, nikethamide, diethylstilbestrol and mecholyl bromide. It also adopted for publication twenty monographs on new drugs and accepted for inclusion in New and Nonofficial Remedies approximately two hundred and fifty drugs, involving over five hundred dosage forms and two thousand five hundred dosages. The Council also gave partial consideration to several hundred other therapeutic agents but did not complete action at the request of the manufacturer pending further investigation or because of insufficient data or submission of the products late in the year.

Although it is impossible to accept all requests for speaking engagements, the Secretary of the Council appeared on several occasions before audiences composed of physicians, chemists, pharmacists, students and others. The Secretary also appeared on several radio programs as a representative of the Council. Tentative plans have been made for a series of exhibits sponsored by the Council on Pharmacy and Chemistry which can be used before medical and lay groups.

ANNUAL MEETING OF THE COUNCIL

During the early part of October the Council held its annual two day meeting to discuss problems which had arisen during the year. The topics discussed included agents used in the prevention and treatment of athlete's foot, the promotion of mixed vitamin preparations to the public, labeling of vitamins used in therapeutic doses, contraceptives, artificial mineral waters, the use of the metric system in Council publications, the scope of New and Nonofficial Remedies, censorship of descriptions of new drugs published in THE JOURNAL and medical pharmaceutical relations. The censorship of Council descriptions of new drugs deserves special mention, as the subject arose following discussion with the Office of Censorship and the Board of Economic Warfare. For the duration of the war, statements of description or methods of preparation of new drugs on their original publication in THE JOURNAL will be subject to censorship in the interests of national defense.

MEMBERSHIP

Dr. Austin E. Smith, who has been a member of the Council's staff at the headquarters office for several years, was appointed Acting Secretary of the Council on Pharmacy and Chemistry by the Board of Trustees following the resignation of Dr. Theodore G. Klumpp in December 1941. Dr. Smith now serves as Secretary of the Council.

The tragic death of Dr. Soma Weiss deprived the Council of a prominent member. As a new member Dr. Weiss had served with the Council only a short time, but during that period his abilities as a stimulating teacher, resourceful clinician and brilliant investigator made him one to whom all freely turned for advice and help. During the year Dr. Robert A. Hatcher retired from active membership and, by special action of the Board of Trustees, was made an Honorary Life Member. Dr. Hatcher was one of the two remaining charter members of the Council. His contributions to science and education as well as his attributes as a scholar and scientist are known to all. Dr. Chester S. Keefer of Boston University School of Medicine and Dr. Robert P. Herwick of the United States Food and Drug Administration were appointed to fill these vacancies.

Summary

The Council on Pharmacy and Chemistry has completed thirty-eight years of service to the medical profession. During 1942 the Council increased its contributions to the welfare of the physician and his patient, was of material aid to many agencies of the federal government in the prosecution of the war effort and established and furthered good will relations with representatives of a number of foreign countries. Several members of the Council and of its office staff are on active service with the armed forces, and others are members of special advisory committees which are aiding in directing the health of the civilian population and of the fighting troops.

Revision of several of the Council's publications was completed during the year, and the popularity of these publications appears to be increasing.

By issuing twenty-seven new research grants through the Committee on Therapeutic Research in 1942, the number of grants issued since 1911, when this committee was established, was brought up to four hundred and ninety-three. The Council initiated several status reports on a number of agents and therapeutic procedures which are of vital importance in medical practice.

The Council adopted for publication forty-four reports on the status of certain classes of drugs, twenty monographs on new drugs and accepted for inclusion in

New and Nonofficial Remedies approximately two hundred and fifty drugs including over five hundred dosage forms and two thousand five hundred dosages. Consideration of several hundred other drugs was not completed for one or more reasons.

During the year the Secretary appeared on several radio programs as a representative of the Council and also filled a number of speaking engagements.

At the annual meeting of the Council, topics discussed included prevention and treatment of fungous infections, promotion of mixed vitamins, labeling of vitamin preparations, mineral waters, contraceptives, use of the metric system, scope of New and Nonofficial Remedies, censorship of published descriptions of new drugs in The Journal and medical pharmaceutical relations.

Dr. Austin E. Smith, who was appointed Acting Secretary following the resignation in December 1941 of Dr. Theodore G. Klumpp, was later made Secretary of the Council on Pharmacy and Chemistry. The Council was deprived of two valuable members through the death of Dr. Soma Weiss and the retirement of Dr. Robert A. Hatcher. Drs. Chester S. Keefer and Robert P. Herwick, authorities in their respective fields, have been appointed as new members.

The Chemical Laboratory

The Chemical Laboratory has served the medical profession for over thirty-six years. In 1942, as in former years, the primary function of the Laboratory has been the chemical consideration of medicinal products for the Council on Pharmacy and Chemistry. Information concerning the identity, purity and strength of new chemotherapeutic agents is made available to the profession generally through reports of the Council and of the Laboratory published in THE JOURNAL.

An important contribution of the Chemical Laboratory in the field of drug analysis during 1942 has been the chemical and physical characterization of the vitamin K active substance menadione bisulfite (2-methyl-1,4-naphthoquinone-sodium bisulfite addition product) and the development of technics for its isolation, identification and detection in mixtures. Although this information has been accepted for publication in the chemical literature, it has not yet been published because of wartime censorship. Another important contribution has been the publication of a method for the detection and quantitative determination of 4-amino-2-methyl-1-naphthol, another synthetic vitamin K.

The Laboratory is equipped with many of the newer types of apparatus which aid in the examination of chemical substances. The space and equipment for macroanalysis and the excellent facilities for microchemical analysis and spectrophotographic examination of materials have been augmented by the installation of a Beckman photoelectric spectrophotometer suitable for the determination of light absorption in both the ultraviolet and the visible portions of the spectrum and of a Coleman photoelectric fluorophotometer useful in the study of certain vitamin mixtures and other fluorescent substances.

WORK FOR THE COUNCIL ON PHARMACY AND CHEMISTRY AND OTHER DEPARTMENTS OF THE ASSOCIATION

Each year the Laboratory is called on by the Council on Pharmacy and Chemistry to examine many of the newer substances being introduced into therapy and to assist in the development of suitable tests and standards by means of which uniformity in composition and action may be assured. In addition to the examination of many other products submitted to the Council in 1942, the Laboratory gave consideration to tests and standards for such substances as vitamin K_1, sulfadiazine, pyridoxine hydrochloride, sulfaguanidine, sulfadiazine sodium, diethylstilbestrol, menadione bisulfite, calcium levulinate, phenarsine hydrochloride, hydroxymercurifuran, phemerol hydrochloride, bismuth ethylcamphorate, aluminum hydroxide gel, aluminum phosphate gel, delvinal sodium, diodrast compound solution, syrup of ammonium mandelate, zinc insulin crystals and succinylsulfathiazole. The Laboratory also served the Council in connection with revision of New and Nonofficial Remedies 1942 and devoted a considerable amount of time to the provision of chemical information in reply to correspondence and to problems of nomenclature.

The Laboratory has continued its cooperation with the Bureau of Investigation in the examination of a number of products sold to the public, has aided the Library staff in the classification of substances under correct chemical designations and has been of assistance to the advertising committee by means of technical advice and a number of laboratory studies.

The Chemical Laboratory continues to enjoy cooperation with the laboratories of the American Dental Association, the U. S. Food and Drug Administration and many manufacturers in the consideration of chemical problems concerning standards for the identity, purity and strength of various drugs.

Summary

The Chemical Laboratory of the American Medical Association has made important contributions, arising from its work for the Council on Pharmacy and Chemistry, in the field of drug analysis. The addition of new equipment maintains its position in the vanguard of well equipped laboratories. The Laboratory has cooperated whole-heartedly with all departments of the Association and with a number of other organizations in the furtherance of its function.

Council on Foods and Nutrition

Throughout the year 1942 the Council on Foods and Nutrition has been in constant touch with developments in the tremendously important food problems that have arisen in connection with the present world conflict, and especially with those that concern the feeding of the civilian population. The Council has aided various governmental agencies in every possible way to meet these problems. With food rationing becoming more and more strict, it has become necessary to devote more attention to methods of meeting nutritional requirements and the special needs of infants and of adults on special diets such as those suitable for use in the treatment of diabetes and peptic ulcer. The Council is keeping constantly in touch with governmental agencies charged with the promulgation and enforcement of orders pertaining to foods.

In cooperation with the Council on Industrial Health, a Cooperative Committee on Nutrition in Industry has been established for the purpose of keeping physicians informed of newer developments in this special field. This committee already has held one meeting and helped arrange a program on the subject, some papers from which recently have been published in THE JOURNAL.

The activities of the Council on Foods and Nutrition during the year have been unusually numerous, but mention will be made only of those matters that are of more immediate interest in the field of nutrition. There has been a crystallization of opinion about the fortification of foods with vitamins and minerals, or both, and the policies adopted by governmental agencies have been largely in harmony with those which have been painstakingly developed by the Council during the last several years. It is hoped that the enrichment of flour and bread, which has now been made compulsory, will contribute importantly to maintaining the health of the civilian population. The Council adopted policies approving of the restorative addition of vitamins and minerals to processed breakfast cereal foods and in this connection has sponsored some original investigations to guide the Council and the industries concerned. Consideration has been given to the question of fortification of canned strained or chopped foods intended for the feeding of infants, small children and invalids, and it was decided that such fortification was unnecessary and hence would not be approved.

The scarcity of some items has brought to the attention of the Council a number of problems pertaining to the substitution of food ingredients. Much vitamin D milk which previously was prepared from a concentrate obtained from cod liver oil now is made with the use of other sources of vitamin D. On considering the evidence, the Council approved of a number of specific types of vitamin D milk but continues its require-

ments that the source as well as the unitage of the vitamin D be declared on the bottle caps. Manufacturers of ice cream have inquired about changes in the formulas of their products, and the Council has maintained the view that the quality, especially the nutritional quality, should be maintained, and that it would be preferable to produce less of an item rather than to diminish its food value.

COUNCIL REPORTS

In a detailed report which recently has been published, the Council has called attention to the desirability of maintaining "nutritional standards" in the formulation of mixed juices, frequently referred to as vegetable juice cocktails. The Council does not approve of juices of inferior nutritive value, which often are obtained when a product, such as tomato juice, is diluted for flavoring purposes with some other material.

A report was prepared and published on the comparative nutritional values of butter and oleomargarine. The evidence indicates that no nutritional disturbances accrue if oleomargarine is substituted for butter in the ordinary mixed diet of adults, provided the oleomargarine supplies at least 9,000 units of vitamin A to the pound.

The nutritional problems frequently presented by sugar and manufactured food products containing large proportions of sugar were carefully studied and reports made. While sugar is a valuable food, the tendency of people to eat considerable quantities of the substance has placed an added burden on the other foods in the diet, because sugar makes no contribution to the dietary requirements except for the calories which it supplies. Restriction of the use of sugar under wartime conditions would appear to be conducive to improved health if the calories previously consumed in the form of this food are replaced to an appropriate extent by foods that make a definite contribution to the nutritive requirements of the body. Consideration was given to the question of adding saccharin to foods, and the Council has concluded that this practice is undesirable except for the production of special purpose foods specifically intended for dietary use by persons who, for medical reasons, must restrict their carbohydrate intake. The Council also concluded that there is insufficient evidence to warrant the inclusion of sorbitol, a carbohydrate substitute, in ordinary foods.

In cooperation with the Council on Pharmacy and Chemistry, a report was published on the proper use of vitamins in mixtures. The principles introduced in this report already have served a useful function in the commercial formulation of these products. In cooperation with the Council on Industrial Health a report was prepared which discusses the pros and cons of the administration of vitamins to industrial workers.

OTHER ACTIVITIES

In conjunction with the Food and Nutrition Board of the National Research Council, an exhibit was prepared on nutritional deficiency diseases. A pamphlet entitled "Food Charts: Foods as Sources of the Dietary Essentials" was also prepared. These activities have aroused considerable interest on the part of both physicians and the general public.

Under the auspices of the Council there has been published in THE JOURNAL a series of articles on foods and nutrition by leading experts in the field. This series of articles is now almost completed and will be reprinted in book form as a Handbook of Nutrition.

Summary

The Council on Foods and Nutrition during 1942 has kept in constant touch with developments in connection with food problems that have arisen as a result of the war and has aided governmental agencies in every possible way to meet these problems.

There has been a crystallization of opinion during the past year concerning the fortification of foods with vitamins and minerals, and policies adopted by governmental agencies have been largely in harmony with those of the Council.

The Council has given consideration to a number of problems pertaining to the substitution of food ingredients and has maintained in some instances that it would be preferable to produce less of an item than to diminish its nutritional quality through substitution.

A Cooperative Committee on Nutrition in Industry has been established in cooperation with the Council on Industrial Health.

Reports of the Council published during the year included a report calling attention to the desirability of maintaining nutritional standards in the formulation of mixed vegetable juices, another on the comparative nutritional values of butter and oleomargarine and, in cooperation with the Council on Pharmacy and Chemistry and the Council on Industrial Health respectively, reports on the proper use of vitamins in mixtures and the administration of vitamins to industrial workers.

A series of articles on foods and nutrition by leading experts in the field have been published in The Journal under the auspices of the Council and will be reprinted in book form as a Handbook of Nutrition.

Council on Physical Therapy

The Council on Physical Therapy believes that, because of the advances made since the conclusion of World War I when physical therapy proved to be of great value for rehabilitating men disabled in combat, physical therapeutic procedures will be employed even more widely and to greater advantage during and following the present conflict. Therefore the Council considers that its most useful function in the present war emergency is the presentation of useful, reliable and factual information about physical therapeutic methods for the attention of civilian, army and navy physicians confronted with the task of rehabilitating the disabled soldier, and much of the Council's activities during 1942 have been directed toward that end.

Because of the restrictions the War Production Board has placed on raw materials, manufacturers of physical therapy equipment have been forced to limit the development of new products. In some instances manufacturers sell their entire output to the government, and in other instances manufacturers have converted all the resources of their plants to the fabrication of materials of war. For these reasons fewer articles have been submitted to the Council for its consideration. The respite thus afforded in the investigation of apparatus has permitted the Council to intensify its study of problems pertaining to the application of physical therapy in the practice of medicine, particularly in military medicine. Government agencies solicit the advice of the Council on physical therapeutic procedures and apparatus, and the problems thus presented have been carefully considered. Many other inquiries have come from members of the profession and from the public, and these too have been answered with the most reliable information at hand.

MANUAL ON PHYSICAL THERAPY

In cooperation with the Subcommittee on Physical Therapy of the National Research Council, the Council prepared a Manual on Physical Therapy, a booklet which describes the application of physical therapeutic agents in the treatment of the injured soldier. The Council is now cooperating with the American Occupational Therapy Association and the subcommittee of the National Research Council in the preparation of a Manual on Occupational Therapy, which gives valuable suggestions to the medical officers in the armed forces and to the general practitioner about the role of occupational therapy in the rehabilitation of war injured.

COUNCIL CONSULTANTS

The field of physical therapy embraces many specialized fields, and the Council is fortunate in having groups of consultants who advise the Council on the problems arising in special fields.

Education.—Since the Council believes that 90 per cent of the clinical value of physical therapy is dependent on intelligent application of exercise, massage and heat, proper instruction of the physical therapy technician is of paramount importance. The Consultants on Education have given valuable advice regarding standards of education and experience for physical therapy technicians. Fortified with this information, the Coun-

cil has cooperated with the Council on Medical Education and Hospitals in revising the standard curriculum for schools for physical therapy technicians. The American Physiotherapy Association and the American Registry of Physical Therapy Technicians of the American Congress of Physical Therapy have contributed valuable assistance.

The Council authorized publication of an article entitled "The Responsibility of Medical Schools to Teach Physical Therapy."

Artificial Limbs.—Participating with a group of specialists from the Association of Limb Manufacturers of America and with qualified surgeons having special information regarding amputations, the Council recorded its studies in the Handbook on Amputations, recently published. This handbook gives useful information for the general surgeon regarding the proper site of amputation, the psychology of the patient, physical therapy procedures to pursue following amputation and training in the most efficient utilization of artificial limbs.

Audiometers and Hearing Aids.—Manufacturers of hearing aids are not restricted as severely in the procurement of raw materials as are the manufacturers of other physical therapy equipment. With the help of the Consultants on Audiometers and Hearing Aids, the Council has continued to examine hearing aids and to publish reports. In conjunction with the consultants, the Council has revised and published the Minimum Requirements for Acceptable Audiometers and is now considering the revision of the minimum requirements for acceptable hearing aids.

An important contribution of the consultants has been the publication of a Tentative Standard Procedure for Evaluating Percentage Loss of Hearing in Medicolegal Cases. This article is the result of four years of careful study, during which all available known methods for determining the loss of hearing were examined and carefully scrutinized. It is believed by the Council that this contribution will be of great importance to the practice of medicine.

A survey of the work of the consultants was reviewed in the article "Five Years of Progress in the Field of Audiometers and Hearing Aids," which was published in THE JOURNAL. The Council appreciates the cooperation and advice which it has received from such organizations as the American Academy of Ophthalmology and Otolaryngology, the American Otological Society, the American Laryngological, Rhinological and Otological Society and the American Society for the Hard of Hearing.

Respirators.—Problems concerning the employment of respirators for producing artificial respiration over long periods of time were considered by the Consultants on Respirators, and valuable suggestions were offered. To aid localities with no adequate supply of respirators, the Council published a report, "Simple Workable Respirator," giving specifications and directions for a homemade respirator.

Ophthalmic Devices.—At its annual meeting in December 1942 the Council voted to reorganize its Committee on Ophthalmic Devices and defined its scope more clearly. Devices to be considered by this group of consultants are charts for testing vision and muscle balance, charts and instruments for orthoptic training, apparatus for applying heat to the eyes, diagnostic instruments of an optical nature and special or tinted lenses for which specific therapeutic claims are made.

ARTIFICIAL RESPIRATION

The Council continued its investigations and surveys in the field of artificial respiration, and evidence on both manual and mechanical artificial respiration has been accumulated. The survey of this problem, which is to be carried on over a period of five years, has been in progress but three years, and a complete report cannot yet be made.

ULTRAVIOLET RADIATION FOR DISINFECTING PURPOSES

Careful study has been given to the use of ultraviolet radiation for disinfecting purposes, and a statement declaring the Council's stand on the acceptance of ultraviolet lamps for this purpose has been published. The Council will consider for acceptance ultraviolet lamps for such use in operating rooms and in clinics and cubicles in hospitals when such places are under the direction of physicians. The Council does not accept lamps claimed to be useful for sterilizing solids and liquids. The acceptance applies only to the disinfecting of air under controlled conditions.

"APPARATUS ACCEPTED"

The booklet "Apparatus Accepted" has been brought up to date and is available for distribution in its revised form. It contains a list of apparatus investigated and accepted by the Council.

RESEARCH

Through the Council's Committee on Research, grants were made available for research to determine experimentally the minimum number and forms of electric current best suited for stimulation of normal and paralyzed muscles, and to continue the survey of different methods of artificial respiration.

Twenty-one reports of the Council on Physical Therapy were printed in THE JOURNAL in 1942.

The members of the Council on Physical Therapy and the Council's consultants, who receive no remuneration, have given most generously of their time and effort in promoting the work of the Council.

Summary

During 1942 the Council on Physical Therapy concentrated its efforts on reviewing the field of physical therapy and on making available reliable information about physical therapy in the treatment and rehabilitation of men disabled in combat. Because of the War Production Board restrictions, less physical therapy apparatus was submitted for consideration.

With the assistance of other groups, the Council prepared the Manual of Physical Therapy and the Handbook on Amputations, which have proved to be of great help to medical officers in the armed forces as well as to civilian practitioners. The Handbook on Occupational Therapy, now in preparation, should be a valuable guide to all who are interested in rehabilitation.

Important contributions of the Council's groups of consultants during 1942 were assistance in revising the curriculum for schools for physical therapy technicians, preparation of the Handbook on Amputations, investigation of audiometers and hearing aids, and published specifications for a homemade respirator.

Application of ultraviolet radiation for disinfecting purposes was studied, and a statement of the Council's position on the problem was published.

The booklet "Apparatus Accepted" was revised during the year.

Grants were made available for research on problems vital to physical therapy.

Council on Industrial Health

DEVELOPMENT OF INDUSTRIAL HEALTH SERVICE

As experience accumulates, the Council on Industrial Health believes that any considerable spread of industrial health service, particularly into smaller industrial units, or substantial elevation of medical standards in industry will depend on four major activities, namely creation of public interest, clarification of objectives, industrial medical education and improved industrial health organization in medical societies.

Creation of Public Interest.—The greatest single obstacle to industrial medical development is lack of information about the health and economic benefits of preventive industrial medicine on the part of employers and employees.

It was recommended at the Atlantic City session in 1942 that an agency for public information, preferably attached to the Subcommittee on Industrial Health and Medicine of the Office of Defense Health and Welfare Services, be created to acquaint industrialists with the advantages of medical service in industry. This recommendation was approved by the House of Delegates, but it has not been feasible to operate in this fashion and an alternative suggestion has been to the effect that public instruction should emanate from the Council on Industrial Health. It is the present intention that the staff of the Council shall prepare educational material for publication in THE JOURNAL and

in HYGEIA for redistribution through the AMERICAN MEDICAL ASSOCIATION NEWS into suitable channels of public information.

Contact has been maintained with employer associations. The National Association of Manufacturers continues to conduct conferences on industrial health for employers in selected areas, and the Council undertakes to supply names of physicians in these areas who may be willing to assist in this kind of educational service. The Chamber of Commerce of the United States has created a Health Advisory Council, and one of its major functions will be concerned with industrial health. The Council on Industrial Health has been consulted in the preliminary plans and is represented on the Advisory Council itself. It is expected that through this agency trade associations may be reached as well as state and local chambers of commerce.

The Council believes that there should be closer contact with labor organizations and that effort should be made to enlist their cooperation not only in establishing and maintaining preventive medical services within plants but also in the development of programs of health education covering nonoccupational disability.

Clarification of Objectives of Industrial Health Service.—Since its inception, the Council on Industrial Health has tried to define as concisely as possible the purposes of industrial health service.

The essentials of an industrial health service are:

1. A competent physician who takes genuine interest in applying the principles of preventive medicine and hygiene to employed groups and who is willing to devote regular hours to such service in the working environment.

2. Industrial nurses with proper preparation, acting under the physician's immediate supervision or under standing orders developed by him or by the committee on industrial health of the county medical society.

3. Industrial hygiene service directed at improvement of working environment and control of all unhealthful exposures, to be provided by physicians and others with guidance and assistance from the specialized personnel in state and local bureaus of industrial hygiene.

4. A health program which should include prompt and dependable first aid and emergency and subsequent medical and surgical care for all industrially induced disability; health conservation of employees through physical supervision and health education; close correlation with family physicians and community health agencies for early and proper management of nonoccupational sickness and injury, and good records of all causes of absence from work as a guide to the establishment of preventive measures.

Industrial Medical Education.—Better opportunities for training have always been major objectives in the program of the Council. If there is to be greater demand for health conservation of the working population, physicians must be prepared to meet it. Educational activity in industrial health at the present time includes undergraduate and postgraduate study, intensive short courses and longer courses.

Considerable improvement has occurred in the kind and amount of industrial health instruction received by undergraduate medical students. A syllabus has been distributed by the Council to all approved medical schools in the United States and Canada and has been favorably received. This syllabus will be revised and redistributed in accordance with advances made in the field.

Introductory and refresher courses for the profession at large have usually been of one day's duration and have been offered in fifteen states. Contact has been established with the Associated State Postgraduate Committees of the State Medical Societies to extend this kind of activity.

Some experimentation is taking place with respect to intensive short courses under medical school sponsorship alone and in company with county and state medical society committees on industrial health. Response so far has been encouraging.

Opportunities for extended training by means of longer courses have been limited to a few professional schools. Until much greater development occurs along these lines, the status of industrial health as a specialty classification will be greatly retarded.

Improved Industrial Health Organization in Medical Societies.—The Council has continued to take advantage of the structure of the American Medical Association to promote better medical organization for industrial health. All constituent state medical associations with the exception of Delaware, New Mexico and Vermont now have cooperating committees on industrial health. Some of them are doing excellent work, while others are committees in name only. Future success will depend on the reorganization of inactive committees and more comprehensive programs where progress is being made. Regular contact is maintained with these committees through bulletins, correspondence and field activity.

Some of the state committees on industrial health have met with considerable success in establishing cooperating committees in the county medical societies, a movement which contains the elements of genuinely successful organization. Full instructions for the guidance of these county society committees have been prepared and published by the Council.

There has been good progress in the relationship of the Council to the sections of the Scientific Assembly of the American Medical Association. Cooperating committees have been formed in all of the sections concerned. Some have already performed extremely valuable services, particularly those representing the Sections on Obstetrics and Gynecology, Dermatology and Syphilology, and Ophthalmology, while others are still in developmental stages. These agencies can be of immense assistance in educational and organizational activities.

The joint committee on nutrition in industry, composed of representatives of the Council on Industrial Health and the Council on Foods and Nutrition, has reviewed recent developments and will soon issue specific reports and recommendations. A symposium on this subject was sponsored by the joint committee at the fifth Annual Congress on Industrial Health.

A joint committee with the Council on Pharmacy and Chemistry is called for in a recent resolution of the Council on Industrial Health with a view to preparing and publishing an industrial medical formulary.

It is proposed to create a liaison committee with the Council on Physical Therapy as a means of maintaining close contact with agencies in the field of rehabilitation and for other purposes of report and procedure.

REPLACEMENT OF MEDICAL PERSONNEL IN ESSENTIAL WAR INDUSTRY

A special activity of the Council during the past year stems from requests of the War Participation Committee and the Procurement and Assignment Service to develop a plan for recruitment and placement of medical volunteers for service in essential war industry. The Council's plan included a canvass by county medical society committees on industrial health of available health resources in industrial areas and especially of physicians already serving or willing to serve in industry, of county and state facilities for specialized industrial hygiene consultation and of the existing industrial nurse supply. The plan also included adjustment to additional requirements by notifying industry that, if a plant needs additional medical service, application should be made to the county medical society committee on industrial health, which in turn will decide whether the need is valid and will attempt to meet the need locally; that, if no local resources are available, the state chairman of procurement and assignment with the help of the state committee on industrial health will attempt to locate and assign the nearest competent volunteer, or that, if no resources exist in the state, arrangements may be made for intensive postgraduate training of volunteers having no previous training or experience or out of state volunteers may be secured by application to the Council on Industrial Health. The details of this procedure have been called to the attention of the state agencies concerned.

COMMITTEES OF THE COUNCIL

The Committee on Physical Examinations has prepared an outline of physical examinations in industry, which will shortly be ready for publication.

In addition to encouraging physicians to report occupational diseases, the Council expects, through its Committee on Occupational Disease Reporting, to give much more attention to

absenteeism studies as a basis for clinical investigation of morbidity and mortality in the working population.

The Committee on Research is attempting to establish working relationships with similar committees of the sections of the Scientific Assembly for clinical investigation into medical and surgical aspects of industrial health service.

Cash and medical benefits for industrial disability, in the opinion of the Council's Committee on Workmen's Compensation, comprise only one phase of workmen's compensation. Additional effort should be made to incorporate prevention and rehabilitation into a well rounded program. Steps have already been taken to interest compensation administrators and rehabilitation officials in a cooperative program with the Council as a means of returning disabled workers to a self-sustaining basis as quickly as possible. It is the intention of the committee to prepare for publication reports on the best prevailing medical opinion concerning medical aspects of workmen's compensation administration.

INSURANCE RELATIONSHIPS

The Council has met from time to time with the Joint Claims Committee of the Stock and Mutual Casualty Insurance Companies, and it has been agreed that some conference machinery should be established between the two bodies for regular discussion of matters of mutual interest.

INDUSTRIAL NURSING

At the present time an Outline of Procedure for Nurses in Industry is being prepared which will consist mainly of standing orders to be used as a guide by industrial nurses without regular medical supervision.

INDUSTRIAL MEDICAL SERVICE PLANS

The Council is impressed with the rapid growth of industrial medical service plans and believes that information about them ought to be collected and made available to the profession as quickly as possible.

Summary

Four major activities must be energetically pursued if industrial health service is to become widespread and if standards of medical service in industry are to improve. These are creation of public interest, clarification of industrial health objectives, improved industrial medical training and better local organization for preventive industrial medicine, surgery and hygiene.

The ramifications of industrial health service are widespread and, if the clinical, economic and social problems involved are to be met competently, the interest of all elements and established agencies in medicine must be secured and effectively employed. Cooperation has been requested from state and county medical societies, specialty groups and the councils and bureaus of the American Medical Association.

The Council on Industrial Health has undertaken to organize programs which will induce physicians to take more interest in adequate service for small plants and to develop a means for staffing essential war industry on a volunteer basis.

Committees of the Council are engaged in studies of physical examination in industry, occupational disease reporting, workmen's compensation and essential research.

Nutrition of the industrial worker is receiving much attention from government, from employers and from workers.

Medical service plans are affecting the whole field of professional relations in industry, and the Council on Industrial Health believes that data ought to be available concerning these plans.

Contact has been maintained with agencies of the federal government and with insurance, industrial and professional groups interested in industrial health. Cooperation from labor will be sought in the inauguration and maintenance of preventive medical service in industrial plants as well as of health education in general.

Bureau of Health Education

The impact of war on the work of the Bureau of Health Education has begun to be apparent. Increasing travel difficulties indicate that 1942 will be the last year "for the duration" in which the Director of the Bureau can do extensive traveling.

There was a slight shrinkage in the total volume of mail handled by the Bureau during 1942, which is accounted for by a reduction in official communications with physicians, medical societies and public health agencies and a decline in radio audience mail. Question and answer correspondence showed no significant fluctuation.

The arrangement continues whereby the office work of the Committee on American Health Resorts is carried on in the Bureau of Health Education by the Director and a stenographer assigned to the committee. The Bureau has recently been assigned the responsibility of cooperating with the Association's new Committee on Student Health.

BUREAU PUBLICATIONS

Thirty-eight items were prepared in the Bureau for publication in THE JOURNAL and seventeen for publication in HYGEIA. Twenty-nine articles prepared in the Bureau appeared in publications other than those of the American Medical Association.

RADIO

The second series of radio broadcasts under the title Doctors at Work, begun in November 1940, was completed during the annual session of the American Medical Association at Atlantic City in June. This was the eighth consecutive year of coast to coast network dramatized broadcasts. It continued to its close with every indication of enthusiastic acceptance by physicians, nonmedical radio listeners, radio reviewers and the National Broadcasting Company.

For 1942-1943 a new type of program was decided on with a title which would link it with the war situation and with the successful "Doctors at Work" broadcasts. The new program was entitled "Doctors at War." It was found advisable to adopt a presentation similar to that of the March of Time. Owing to network conflicts with opera, postseason football games and government broadcasts related to the war, it was not possible to start "Doctors at War" until Dec. 26, 1942. The time for the program was the same as for the last series of "Doctors at Work," namely Saturday afternoons at 5 p. m. Eastern War Time.

Use of the radio library service maintained by the Bureau for local broadcasting showed a slight increase over 1941. Twelve county medical societies used material from this radio library for the first time in 1942. The library now contains 753 titles, a reduction from 919 in 1941. Conditions due primarily to the war have interfered with local broadcasting. This is a time when broadcasts by the medical profession are of special importance, and the Bureau hopes to furnish transcribed programs for local use as a means of helping to take up the slack and to make up for curtailed travel in 1943.

The Director delivered sixteen radio talks over local stations outside of Chicago while traveling, and the Assistant Director delivered one.

At the Atlantic City session three local broadcasts were arranged, plus one broadcast each on the networks of the National Broadcasting Company, the Columbia Broadcasting System and the Blue Network. One of these local broadcasts was of round table type.

MEETINGS AND CONFERENCES

The Director and the Assistant Director traveled 32,041 miles to address audiences or attend meetings in twenty-two states. Twenty-seven medical audiences, 147 lay audiences and 42 professional audiences other than medical were addressed, with a total attendance of 62,724. Fifty-eight conferences and meetings were attended.

Increasing costs, difficulties and travel delays consequent on the war situation make necessary a revaluation of the Bureau's activities. It appears advisable to turn to radio to replace travel.

HYGEIA LOAN CLIPPING COLLECTIONS

Withdrawal of physicians from local communities has affected the demand for clipping loan collections, which in 1942 were

sent to only 265 physicians in 36 states and Canada. This is an activity which probably will be maintained "for the duration" at a low level.

HEALTH PUBLICATIONS

As a result of a large cut in the Association's paper quota consequent on the war situation, a careful review was made of the pamphlet situation. There was a total distribution of 365,787 pamphlets, including 148,625 HYGEIA reprints, in 1942. This is the second successive year in which the distribution of pamphlets has increased enormously, the distribution in 1940 being 272,211. Since many of these pamphlets are purchased for use in schools, the circulation of this printed matter is greater than the number of copies distributed. No estimate can be made of the total number of readers.

The health posters developed from 1938 to 1940 continue to be in demand. Seven hundred sets were sent out in 1942, making a total of 5,078 sets, or 40,624 individual posters distributed since 1938.

SYMPOSIUM ON HEALTH PROBLEMS IN EDUCATION

The Symposium on Health Problems in Education, customarily arranged in conjunction with the annual session of the American Medical Association, was omitted in 1942 because a previous symposium held at Atlantic City had been disappointing as to attendance. A symposium was held in connection with the annual meeting of the American Association of School Administrators in San Francisco in February 1942, sponsored by the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association with the cooperation of the American Association for Health, Physical Education and Recreation, the Department of Home Economics and the Department of Science Instruction of the National Education Association.

COOPERATIVE RELATIONSHIPS

Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association.—The Joint Committee met at New Orleans in April in conjunction with the annual meeting of the American Association for Health, Physical Education and Recreation. The meeting dealt mainly with questions of health education, healthful curriculum planning and specific problems in education with particular reference to food, fatigue and activity. On the suggestion of the Association for Health, Physical Education and Recreation, a committee was appointed to attempt to draft a statement dealing with the importance of exercise in relation to health and setting forth its benefits, limitations and dangers according to age, sex and physical condition. The Director of the Bureau was invited to participate with this committee and such participation was authorized by the Board of Trustees, which also authorized the Director to call, for consultation, on Drs. Henry A. Christian, Brookline, Mass.; John S. Coulter, Chicago; Peter J. Steincrohn, Hartford, Conn., and A. C. Ivy, Chicago. This statement was not completed as of the end of 1942.

Dr. W. W. Bauer, Director of the Bureau of Health Education, was reelected to membership on the Joint Committee for a five year term.

United States Children's Bureau Advisory Committee.—No meeting of this committee was held during the year.

American Association of School Administrators.—Although the Yearbook Commission which prepared the yearbook Health in Schools has finished its work, the benefits of association with this project continue to be observed. Membership on this commission gives the Director of the Bureau of Health Education improved recognition in his dealings with school administrators. Invitations to participate in educational conferences, meetings of state education associations and the national organizations of educators appear to be increasing as a result of this project. The yearbook itself, which was published early in 1942, has met with unqualified and enthusiastic acceptance.

National Committee for Boys and Girls Club Work.—This work proceeds routinely, with nothing of particular interest to report in 1942.

National Congress of Parents and Teachers.—The most significant development in 1942 was the modification of the health and Summer Round-Up program taking cognizance of the scarcity of doctors and nurses in home communities and endeavoring to minimize the demands on the time of these professional persons without losing the interest and impetus which has been built up by Parent-Teacher organizations through years of effort.

Other Organizations.—The following organizations, on which the Director of the Bureau represents the American Medical Association, were inactive during the year though not officially discontinued: Advisory Board, American Camping Association; Committee on Public Health, American Film Center; Advisory Committee, Community Nursing Service, National Organization for Public Health Nursing; Accident Prevention Conference, U. S. Department of Commerce.

The Committee on Professional Education of the American Public Health Association rendered a report in 1942 and was discharged. This report of the committee has now been adopted by the Governing Council of the American Public Health Association. It outlines educational and personal qualifications for health educators and states broad definitions of their functions under different circumstances.

The National Health Council Committee for the Study of Voluntary Health Agencies met at St. Louis during the meeting of the American Public Health Association and received progress reports. Thus far the study appears to deal mainly in generalities.

The National Conference for Cooperation in School Health Education met in December, pursuant to the call of its executive committee, which met in November. The Director of the Bureau attended the latter meeting but was prevented by illness from attending the conference. The conference confirmed the action of the executive committee, which recommended that the conference must either procure funds to carry out its work or disband, since there is no profit in continuing to meet merely for an exchange of views out of which nothing constructive could grow because of lack of funds and personnel for development. The conference voted to attempt to secure a grant of funds.

The Bureau has cooperated with twenty-nine agencies of the federal government or has furnished information to them during the year.

The Assistant Director of the Bureau has been appointed a member of the First Aid Medical Advisory Committee of the Chicago Chapter, American Red Cross.

MISCELLANEOUS

The Bureau was not called on during 1942 for active cooperation with the American Medical Association Committee for the Protection of Medical Research except to distribute to senior students in seventy-one medical schools pamphlets on animal experimentation accompanied by pamphlets on medical economics.

The Bureau continued its cooperation with the Woman's Auxiliary to the American Medical Association in its various projects.

The Director of the Bureau with the assistance of several members of the headquarters personnel furnished to Dr. L. D. Bristol for the Fuel Rationing Division of the Office of Price Administration a review of the literature relating to health and comfort temperature zones in homes, institutions, hospitals, commercial and industrial establishments, offices and other indoor places.

The Assistant Director of the Bureau was placed in charge of equipping a first aid and recovery room for the benefit of employees in the Association's building. This first aid room will also serve to fulfil requirements of the Office of Civilian Defense in case of enemy action. The Assistant Director is in charge of first aid, under the Office of Civilian Defense, in the headquarters building.

The Bureau continued to promote periodic health examinations during 1942.

Summary

Increasing travel difficulties indicate that 1942 will be the last year for the duration of the war in which the Director or the Assistant Director of the Bureau of Health Education can do extensive traveling.

Another result of the war has been a slight reduction in the volume of mail handled by the Bureau.

Office work for the Association's Committee on American Health Resorts continues to be carried on in the Bureau and, in addition, the Director of the Bureau has recently been assigned the responsibility of cooperating with the new Committee on Student Health.

The American Medical Association's radio broadcasting program is conducted under the supervision of the Director of the Bureau. A new type of program entitled "Doctors at War" was started for 1942-1943 and has received much favorable comment. There was a slight increase in the use of the radio library service maintained by the Bureau, although war conditions have interfered with local broadcasting. The Bureau hopes to furnish transcribed programs for local use in 1943. The usual radio programs were successfully put on during the annual session of the Association at Atlantic City.

The distribution of Bureau pamphlets, including reprints from Hygeia, continues to increase, and the demand for the health poster sets sent out by the Bureau on request is well maintained.

Cooperative relationships were continued in 1942 between the Bureau of Health Education and other organizations, including the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association, the U. S. Children's Bureau Advisory Committee, the American Association of School Administrators, the National Committee for Boys and Girls Club Work, the National Congress of Parents and Teachers, the National Conference for School Health Education, the Woman's Auxiliary to the American Medical Association and a number of other groups as well as twenty-nine official agencies of the federal government.

The Director of the Bureau, with the assistance of others of the headquarters personnel, furnished a review of the literature relating to health and comfort temperature for the use of the Fuel Rationing Division of the Office of Price Administration.

Bureau of Legal Medicine and Legislation

The preparation of an adequate index to the third volume of Medicolegal Cases was completed during the year and this volume, containing abstracts of more than eight hundred court decisions of medicolegal interest that were published originally in THE JOURNAL during the calendar years 1936-1940, is now available. The preservation of these abstracts in book form, as recommended in a resolution adopted by the House of Delegates in 1932, makes readily available an important grouping of court decisions of medicolegal significance, indexed primarily so as to reflect the medical issues involved.

LAWS REGULATING THE USE OF BARBITURATES

In the annual report of the Bureau for 1940 it was pointed out that twenty-seven states had at that time enacted laws to prevent promiscuous sales of the barbiturates, twenty-five of which limited sales to sales on prescription. The House of Delegates recommended that efforts be made to stimulate the remaining states to enact similar legislation.

During 1942 the legislatures of only eight states were in regular session. In seven of these states legislation of the type under consideration had already been enacted. The remaining state, Louisiana, took no action with respect to the matter. In 1943 the legislatures of forty-two states have met to date. Later on the legislatures of three other states will convene. The Bureau has undertaken to carry out the recommendation of the House of Delegates by communicating with the secretary of the state medical association of each state lacking adequate legislation to prevent the misuse of the barbiturates. In two of the states from which replies were received, Arizona and South Dakota, evidence was supplied indicating that the sale of the preparations was already on a prescription basis by reason of regulations that had been promulgated by the proper enforcement agency and that additional legislation was therefore unnecessary.

In many of the states the medical associations decided to postpone action with respect to this particular legislation until the present war emergency has passed because of the pendency of many acute problems intimately associated with the war effort. In four states, however, Massachusetts, Michigan, Missouri and North Dakota, legislation is now pending to effectuate the recommendation of the House of Delegates. In Connecticut amendatory legislation has been introduced further circumscribing the use of the barbiturates by preventing the refilling of prescriptions except in accordance with the written direction of the prescribing physician and by limiting the dispensing of the barbiturates by a physician to "emergency use" only. This bill also clarifies existing law so as to make certain that the barbiturates may not be dispensed except on prescription. The Bureau will continue its efforts to stimulate legislative action in this field.

MEDICAL LICENSURE AND THE WAR

Many problems of medical licensure have arisen because of the war. One was precipitated by the acceleration of medical courses so that students may graduate after three calendar years of study. There were provisions in medical practice acts of a number of states that prevented the licensure of applicants whose course of medical instruction covered such a short period of time. The Bureau undertook a study of all the medical practice acts and prepared a memorandum covering the results of its study which indicated, in short, that there were nine states, Georgia, Illinois, Kansas, Maryland, Michigan, Nebraska, New Jersey, South Carolina and Virginia, in which graduates after thirty-six months of study could not qualify for licensure. During this study the Bureau collaborated closely with the Federation of State Medical Boards of the United States.

The Bureau and the Federation brought the situation to the attention of the state medical associations and the state medical licensing agencies of the nine states involved, urging that amendatory legislation be promptly enacted so that the graduates after the accelerated courses would not be penalized by inability to obtain licensure. In New Jersey, South Carolina and Virginia necessary legislation has been enacted. In Georgia no legislation to deal with the matter has been proposed. In the opinion of the medical examining board of that state none is necessary despite the fact that the medical practice act requires "at least forty-two months to have elapsed between the beginning of the student's first course of medical lectures and the date of his graduation." In the remaining states appropriate legislation has been introduced with the exception of Illinois, where the legislative committee of the state medical society is preparing a draft of legislation.

Another licensure problem has been precipitated by the development of critical areas in some of the states, areas that have been depleted of the services of physicians by demands of the Army and Navy and areas in which there has been a sudden influx of population. The shortage in such areas in many instances, it is said, cannot be met by the relocating of physicians from other sections of the state involved and it has been necessary to consider the interstate relocation of physicians. Such a process has given rise to the need of providing medical licensure speedily to such relocated physicians. Following a meeting of the Executive Council of the Federation of State Medical Boards of the United States and the Directing Board of the Procurement and Assignment Service for Physicians, Dentists and Veterinarians of the War Manpower Commission held in Washington, it was suggested as an expedient that legislation be enacted by the several states under which temporary permits could be issued to such out of state physicians as were willing to be relocated.

That temporary licensure, even as an expedient to serve a desirable end, is fraught with danger to established standards must be recognized, and considerable opposition has developed to the suggested expedient because of that recognition. It is felt by many that if the customary reciprocity procedures could be geared or adapted to provide licensure promptly for the relocated physician who has been found qualified by the examining agency of another state, then the needs of critical areas could be expeditiously met without undermining the licensure standards that have been constructed over a period of many years.

In states maintaining no reciprocal relations with other states another solution must be sought, for civilian areas distressed by reason of the absence of medical care must be supplied that care either by action in or by the states themselves or in some other manner.

In seven states, Delaware, Kansas, Maine, Maryland, Nevada, Pennsylvania and Vermont, legislation is pending, modeled generally after the draft prepared during the December Washington conference, providing for the issuance of temporary permits or licenses to supply critical areas with needed physicians. Having the same objective in view is a pending bill in Congress relating to the District of Columbia. In the state of Washington legislation has been offered by means of which temporary licenses may be issued valid only until the next ensuing meeting of the examining board. In California a pending bill will speed up the reciprocity procedure so that there will result no unnecessary delay in providing licensure for the relocated physician.

In New York legislation suggests a different approach to the problem of supplying medical care for critical areas. It provides that whenever the governor shall determine that inadequacies of medical facilities or personnel arising out of conditions created by the national emergency exist in any area he may, on the recommendation of the commissioner of health, designate that area as an emergency one. The state commissioner of health will then be empowered, in cooperation with the local board or boards of health and other state, local or federal health or welfare agencies, to designate, appoint or employ for service therein such necessary medical and health personnel as may be required to meet the existing inadequacies. A somewhat similar approach is suggested by a Colorado bill which would authorize the state board of health to declare emergency areas. In such a declared emergency area all full time state, county and municipal public health officers who are graduates of medical, dental or nursing schools approved by the state board of health and who possess licenses to practice in any state will be authorized during the emergency to engage in practice in Colorado regardless of whether or not they hold Colorado licenses. Such public health officers will be permitted to make charges for all services of a private nature, the fees to be deposited in the general fund of the state or in the general fund of a political subdivision, depending on whether services were rendered by an officer of the state or of the subdivision.

Under existing law in New Jersey a qualified physician of another state may be permitted to take charge of the practice of a New Jersey licentiate during the latter's absence from the state. A pending bill proposes that such permission may be granted for a period of not less than two weeks nor more than four months and that the board of medical examiners in its discretion may extend such permission for further periods of two weeks to four months but not to exceed in the aggregate one year.

Another licensure problem will arise if plans now being formulated to accelerate premedical education are carried through. Medical practice acts in a number of states require that an applicant for licensure must present evidence of having completed two years of college work before beginning his professional course. It would seem obvious that, if premedical education is shortened to less than two years, changes will become necessary in the state laws to avoid a licensure problem. While it is possible that in some of these states administrative discretion may be lodged with the examining and licensing agency, such discretion may not be exercised in all the states.

There was at one time too a suggestion that the internship period be reduced, for the duration of the war, from one year to nine months. In ten states medical practice acts require that an applicant must have completed an internship of at least twelve months. A similar requirement obtains in other states, not by reason of any statutory provision, but because of rulings of state boards. In the latter group of states, additional legislation would not be necessary because the matter could be adjusted by a change in board rulings. In the former group, however, amendatory legislation would be required. In two states, Delaware and Pennsylvania, bills have been introduced to reduce, for the duration of the war, the required period of internship from twelve months to nine months. This legislation does not stem from the suggestion that has been made to reduce generally the period of internship to speed up the process of the education of physicians but from situations that have developed in hospitals by reason of the acceleration of medical courses generally. The Delaware bill has become a law.

Twenty-three states have enacted laws imposing on physicians the duty to renew their licenses annually in order to keep them in effect and to pay an annual registration fee. One other state, Missouri, provides for a biennial registration. A number of the states have recognized that injustice may be done to physicians in service who by reason of absence on duty with the military forces will be unable strictly to comply with these laws. To obviate such an injustice, legislation has been proposed to exempt from the registration requirements physicians in the armed forces. Such legislation is pending in California, Colorado, Idaho, Kansas, Minnesota, Missouri, Nebraska, Pennsylvania and Washington.

COURSES IN MEDICAL JURISPRUDENCE

A survey has been initiated to assemble in the files of the Bureau authentic and detailed information with respect to the courses in medical jurisprudence now being offered in the accredited medical schools in the United States. Inquiries have been directed to the deans of such schools and the responses have been most gratifying, replies having been received to date from fifty-seven of the seventy-six schools. In many instances complete outlines of courses have been furnished and in others complete texts of the material used in the courses.

The purposes of the survey, which is continuing, have been threefold: (1) to ascertain the extent to which the subject is now being taught, (2) to obtain detailed information on which to predicate the development of a program of study better to fit the young physician to meet contacts with the law in its various relations and (3) to facilitate the distribution of source material to libraries of medical schools that may advantageously be used in connection with courses in medical jurisprudence. It is appreciated that the time is not propitious to urge now that additional emphasis be given to the subject in medical schools; other needs are more vitally urgent and impelling. The material that has been assembled, however, together with other data that it is hoped may become available, will be carefully studied and compiled. It constitutes basic information on which to predicate recommendations later on.

LEGAL MEDICINE IN PHILADELPHIA

The Bureau has noted with considerable interest an important development in Philadelphia in the field of legal medicine, consisting of an initial series of lectures on legal medicine under the direction of the coroner, Dr. H. M. Goddard, and under the sponsorship of the Philadelphia County Medical Society, the six medical and two law schools of the city, the Bar Association, the District Attorney's office and the Philadelphia College of Pharmacy and Science. The lectures are given at the headquarters of the county medical society and are open, without charge, to all students of the city's medical, law and pharmacy schools and of the police college, and to all physicians and lawyers. The initial series of lectures was well attended and received. Plans are being made to present a second series in the fall and possibly to repeat the program annually. Integrating as they do the various interests of the community that should be concerned with the development of sound knowledge on the subject of legal medicine, these symposiums may well set a pattern worthy of emulation elsewhere.

CERTIFICATION OF CHECKS IN PAYMENT OF NARCOTIC TAX

The House of Delegates at its Atlantic City 1942 session adopted a resolution in protest of the requirement that checks in payment of the annual tax of one dollar imposed on physicians by the Harrison Narcotic Act be certified, urged that the Association take steps for the elimination of the requirement and suggested that copies of the resolution be sent to important national dentist, veterinary, pharmacist, manufacturing chemist and banker organizations. Copies of the resolution were sent to the American Veterinary Medical Association, the American Pharmaceutical Association, the American Pharmaceutical

Manufacturers' Association, the American Drug Manufacturers' Association, the American Chemical Society, the American Bankers' Association and the American Dental Association. Three of the associations named merely acknowledged receipt of the communication; no replies were received from the others.

Collectors of internal revenue may, by law, receive uncertified checks in payment of certain taxes, such as income, war profits and excess profit taxes. Section 3656(b), Internal Revenue Code, sets forth the conditions under which uncertified checks may be accepted by the several collectors in the following language:

> "Collectors may receive uncertified checks in payment of income, war profits, and excess profits taxes, and any other taxes payable *other than by stamp*, during such time and under such rules and regulations as the Commissioner, with the approval of the Secretary, shall prescribe." (Italics supplied.)

The Harrison Narcotic Act tax is paid by stamp and therefore under the existing law collectors of internal revenue are not authorized to receive uncertified checks in payment thereof. In the hope, however, that there was some possibility of the exercise of administrative discretion in the matter, the Bureau addressed a letter to the Commissioner of Internal Revenue, calling attention to the resolution adopted by the House of Delegates and to the fact that the present requirement is a source of irritation to physicians. It was suggested that if there was a practical way by which the matter could be adjusted administratively the reaction would be most beneficial. It was suggested to the Commissioner too that, if uncertified checks could be accepted in payment of the tax and the delivery of the tax stamps held up until the checks have cleared, the source of irritation would be removed and the collectors of internal revenue would, at the same time, be afforded protection to the same extent as they are at the present time. The Office of the Commissioner of Internal Revenue, however, not unexpectedly advised the Bureau that in the absence of a change in the law it would be unable to authorize the collectors to accept uncertified checks in payment of the narcotic tax.

In order to accomplish the results suggested in the resolution adopted by the House, it will be necessary to secure the enactment by Congress of amendatory legislation and, since such legislation, to be consistent, must abrogate the certification requirement with respect to all taxes paid by stamps, the probability of the Congress acquiescing in the suggested change would seem to be remote.

THE NEW FEDERAL INCOME AND VICTORY TAX

The revenue act of 1942 was approved by the President on Oct. 21, 1942. It greatly increased the tax burden of physicians along with other federal income tax payers. It effected no changes, however, in the deductions that a physician may claim for professional expenses. A detailed statement of the provisions of the new law was prepared by the Bureau and published in the Jan. 30, 1943 issue of THE JOURNAL to aid physicians in the execution of their returns, particular emphasis being placed on the requirements of the law in relation to physicians in service.

In the annual report for the Bureau for last year, attention was directed to an injustice that had existed for a number of years in the manner in which uncollected accounts on the books of a physician at the time of his death have been treated for income tax purposes. Efforts were made by the Bureau to correct that unjust situation. The efforts met with success. Hereafter such unpaid accounts will not be considered as part of the income of the decedent for the year of death, as has heretofore been the case, but will be taxable when paid as a part of the income of the person who received the money. This change in the law will relieve the estates of deceased physicians of a tax burden that might easily impose a very severe hardship.

A new provision appears in the act under which a taxpayer may deduct amounts expended for medical, dental and hospital care to the extent that such expenses exceed 5 per cent of the net income of the taxpayer but not in excess of $2,500 in the case of the head of a family or $1,250 in the case of other individual taxpayers. Prior to this new federal provision the income tax laws of two states, Idaho and Minnesota, specifically authorized the deduction of such expended amounts. The Idaho law authorized the deduction of amounts in excess of $100. The Minnesota law contained no limiting phraseology as to the amount to be deducted. Since the federal authorization was enacted, legislation has been proposed in New York, Oklahoma and Wisconsin to authorize the deduction of an unlimited amount and in Iowa to authorize the deduction of amounts similar to those authorized in the federal act.

The new revenue act imposes a 5 per cent victory tax on individuals applicable to income received after Dec. 31, 1942. Physicians generally need not be concerned with the payment of this tax until they file their returns on or before March 15, 1944 unless in the meantime a pay as you go system of the collection of federal income taxes is made effective. Beginning Jan. 1, 1943, however, physicians who were employers have been required to withhold the tax from wages paid in excess of $12 a week or $624 a year. Physicians who have been employees have had the tax withheld from their salaries. To apprise the medical profession of the obligations imposed on it by this new victory tax, the Bureau prepared a summary of its requirements, which was published in the Dec. 5, 1942 issue of THE JOURNAL.

SCIENTIFIC TESTS FOR INTOXICATION

Laws are in force in Indiana, Maine and New York that give recognition to the reliability of chemical tests to determine intoxication by specifically providing for the admission in evidence of the results of such tests. The courts too, even in the absence of specific legislation, have admitted the results in evidence in cases in which the suspected drunken person has voluntarily submitted to the test, on the general ground that the testing procedure has passed beyond the twilight zone of the experimental into the realm of demonstrable, scientific dependability. Several cases involving the admissibility of this type of evidence have arisen in Iowa, others in Arizona, Massachusetts and Texas.

In the absence of consent to the tests, a few courts have declined to admit the evidence on the ground that if admitted the constitutional rights of the defendant would be impaired. Whether or not in reaching this conclusion these courts have made correct decisions cannot be debated here, yet it can be said that some writers have taken issue with the legal philosophy followed by such courts. In order that full advantage may be taken of chemical tests to determine intoxication in meeting the drunken driver problem, it would seem obvious that ways must be found to make the tests compulsory. None of the laws that have been enacted contain a compulsory feature nor do any of the bills that are currently pending in the legislatures of Illinois, Iowa, Nebraska and Wisconsin.

In 1942 the Committee on Tests for Intoxication of the National Safety Council appointed a special committee to study and recommend appropriate legislation in the field of tests for intoxication. A member of the Bureau's staff served on this special committee, which has spent many months in reviewing critically a number of possible approaches to the problem through legislation. Through the efforts of this special committee it is hoped that final drafts of legislation will be formulated that can be recommended for enactment in the several states.

PRIVILEGED STATUS OF PHYSICIAN-PATIENT RELATIONSHIP

The American Law Institute at its May 1942 meeting adopted a Model Code of Evidence for submission to the several states for enactment. The second tentative draft of this code omitted all reference to a privileged status to be accorded the physician-patient relationship. The reasons assigned for the rejection of the status were, in effect, that such a privilege was not in the public interest, that it fostered fraud by suppressing valuable testimony and that there was no evidence that the privilege tended to improve the public health.

The Bureau filed a brief with the Institute objecting to the omission, and a staff member of the Bureau attended the meeting of the Institute at which the code was to be considered for final adoption and presented reasons why the code should contain a provision according a privileged status to the relationship. It was pointed out that a privileged status is desirable because it inspires confidence in the patient to make a full dis-

closure to his physician of his symptoms and conditions and that such a disclosure is necessary to enable the physician adequately to perform his functions. The Institute was asked to reconsider the rejection of the privilege, to study the problems involved and to attempt to evolve a solution that would eliminate whatever abuses existed without at the same time impeding and hampering the medical profession in making available to the public the benefits of the art and science of medicine to the fullest extent. After a full discussion of the subject, the Institute voted to include in the code a section dealing with the physician-patient relationship under which physicians may not, in the absence of the patient's consent, be compelled or permitted to testify, in any state that adopts the code, with respect to information obtained by him by virtue of the relationship, subject to certain limitations and exceptions.

Among other things, the privilege may be asserted by or on behalf of the patient only in a civil action or in the prosecution for a misdemeanor. The communication involved must have been confidential and reasonably believed by the patient or the physician to be necessary or helpful to enable the physician to make a diagnosis of the patient's condition or to prescribe or render treatment. No privilege will exist if the services of the physician were sought or obtained to aid any one to commit or to plan to commit a crime or a tort, or to escape detention or apprehension after the commission of a crime or a tort. There will be no privilege as to any relevant communication (*a*) on an issue of the patient's condition in an action to commit him or otherwise place him under the control of another because of an alleged mental incompetence, or in an action in which the patient seeks to establish his competence, or in an action to recover damages on account of conduct of the patient which constitutes a criminal offense other than a misdemeanor; or (*b*) on an issue as to the validity of a document as a will of the patient; or (*c*) on an issue between parties claiming succession from a deceased patient. There will be no privilege in an action in which the condition of the patient is an element or factor of the claim or defense of the patient. The privilege does not apply with respect to information which the physician or the patient is required to report to a public official or information required to be recorded in a public office, unless the statute requiring the report or record specifically provides that the information shall not be disclosed.

The privilege will be terminated if the patient, his guardian or personal representative has caused the physician, his agent or servant to testify in any action to any matter of which the physician, his agent or servant gained knowledge through the communication.

The code defines a "confidential communication between physician and patient" to mean—

> such information transmitted between physician and patient, including information obtained by an examination of the patient, as is transmitted in confidence and by a means which, so far as the patient is aware, discloses the information to no third persons other than those reasonably necessary for the transmission of the information or the accomplishment of the purpose for which it is transmitted.

This Model Code of Evidence, having been adopted by the Institute, will no doubt be recommended for enactment in the several states. In those jurisdictions in which a privileged status is now accorded the physician-patient relationship, state medical associations may well compare the existing law with that proposed by the code.

STATE LEGISLATION

The legislatures of only eight states met in regular session during 1942. In addition there were special sessions held in thirteen states, two of which also held two special sessions. Little legislation of medical interest was enacted. A brief reference to the more important measures, from the medical point of view, that were enacted follows:

Medical Practice Acts.—Five measures proposing amendments to existing medical practice acts were adopted in three states. As previously pointed out, enactments in New Jersey and Virginia amended existing laws so that graduates after accelerated medical courses may obtain licenses. A new New York law provides that nothing in the medical practice act shall prevent the practice of medicine by an interne while serving in a state hospital or in a hospital of a political subdivision of the state. Another New York law provides that in the counties comprising the city of New York the filing fee for a license to practice medicine is to be $2 instead of the previous $1. A new Virginia law increases the per diem fee to be received by members of the board of medical examiners, except the secretary, from $8 to $10 and increases the salary of the secretary of the board from $1,000 to $1,500.

Osteopathic Practice Acts.—An amendment to the Arizona osteopathic act was adopted which defines osteopathy as "that system of treatment and healing of abnormalities of the human mind and body as taught and practiced in the standard colleges of osteopathy recognized by the American Osteopathic Association" and which provides that no osteopathic practitioner may practice major surgery unless he has had subsequent to his fulfilment of all other requirements of the act at least two years of surgical internship in a hospital or hospitals approved either by the American Osteopathic Association or by the American Medical Association and then only in osteopathically owned or controlled hospitals or institutions.

Chiropody Practice Acts.—An amendment to the New Jersey chiropody act was enacted which defines chiropody as "The diagnosis of any ailment of the human foot, or the treatment thereof by any one or more of the following means: local medical, mechanical, minor surgical, manipulative and physiotherapeutic or the application of external medical or any other of the aforementioned means except minor surgical to the lower leg and ankle for the treatment of a foot ailment; not including, however, the treatment of tuberculosis, osteomyelitis, malignancies, syphilis, diabetes, tendon transplantations, bone resections, amputations, fractures, dislocations, the treatment of varicose veins by surgery or injection, the administration of anesthetics other than local, the use of radium, the use of x-ray except for diagnosis, or the treatment of congenital deformitories by the use of a cutting instrument or electrosurgery. The term 'local medical' hereinbefore mentioned shall be construed to mean the prescription or use of a therapeutic agent or remedy where the action or reaction is intended for a localized area or part."

Premarital Examination Laws.—The Maine premarital examination law was amended to permit a certificate of freedom from a venereal disease to be issued by a physician who is a graduate of a class A medical school and who is licensed to practice in any state. The previous Maine law limited the physicians who could issue such a certificate to physicians licensed to practice in Maine.

Narcotic Drugs.—Amendments to existing uniform narcotic drug acts were adopted in Kentucky and New York. The new Kentucky law amended the exemption section of the act by limiting its applicability to the "administering, dispensing, or selling at retail of any medicinal preparation that contains in one fluid ounce, or if a solid or semi-solid preparation, in one avoirdupois ounce, not more than one grain of codeine or of any of its salts." The New York amendment exempts from the provisions of the narcotic drug act the administering, dispensing or selling at retail of Stokes expectorant or brown mixture in a quantity of not more than 4 ounces to one person at one time, or any medicinal preparations other than Stokes expectorant or brown mixture that contains in 1 fluidounce or, if a solid or semisolid preparation, in 1 avoirdupois ounce, not more than 1 grain of codeine or of any of its salts.

Dangerous Drugs.—The Virginia law prohibiting the sale of stated hypnotic or somnifacient drugs except on the prescription of a licensed physician, dentist or veterinarian was amended to include sulfanilamide, sulfathiazole, sulfapyridine, sulfadiazine, sulfaguanidine and any sulfanilamide derivatives by whatsoever trade name or designation, any related compound, preparation, mixture or salt thereof, any salt or derivative thereof, and any preparation or mixture containing any of them.

Nurses.—An amendment was adopted to the nursing practice act of New York which provides that nothing therein shall be construed until one year following the cessation of hostilities as prohibiting the practice of nursing by other than registered or practical nurses.

Venereal Diseases.—A new Michigan law requires physicians to report all cases of venereal diseases coming under their professional observation. The state health commissioner is authorized to make rules and regulations for the care, treatment, hospitalization and isolation of persons afflicted with venereal diseases, but such persons shall have the right to select the physician or mode of treatment of their own choice. A person, however, neglecting to submit to treatment may be forcibly detained and subjected to treatment.

Cash Sickness Insurance.—A new Rhode Island law creates a cash sickness compensation fund from which eligible employees (quite generally employees subject to the unemployment compensation act of the state) will be paid weekly benefits not exceeding $18 during such period up to twenty weeks as they are unable to perform any services for wages because of physical or mental disabilities. To create this fund employers of eligible workers are required to deduct 1 per cent from the first $3,000 of each employee's wages. This law is the first of its type to be enacted in the United States.

FEDERAL LEGISLATION

Seventy-Seventh Congress.—The second session of the Seventy-Seventh Congress adjourned Dec. 16, 1942. Few measures of medical interest were enacted during the session other than those associated with the general war effort. Federal funds to the extent of $5,000,000 were made available for loans to students pursuing accelerated medical courses and certain other designated technical courses. Legislative action was completed on a Treasury Department initiated measure to regulate the growing of the opium poppy in the United States and to provide for the manufacture of opium from the plants. The growing of the opium poppy, particularly in certain Western States, had become widespread and, while the opium poppy was grown principally to supply a demand for poppyseed, the price of which had advanced from around 6 cents a pound to 50 cents a pound because of an inability to obtain the seeds from the normal sources abroad, the new venture did bring in its wake a distinct problem to law enforcement officials to prevent the diversion into illicit channels of opium obtainable from the opium poppy. The war too had greatly diminished the sources of supply for opium and the new law provides through a system of licenses a method by which the growing of the opium poppy may be regulated and by which in case of need opium may be manufactured in this country from the opium poppy that is grown, under the supervision of the federal government.

The employment by the military establishment of and the giving of a military status to female dietetic and female physical therapy personnel were authorized by another bill enacted late in December. This law too permits the employment of other technical and professional female personnel in categories required for duty outside the continental United States.

The Soldiers' and Sailors' Civil Relief Act was variously amended to provide additional civil relief for persons in military service. Of particular interest to the medical profession is a provision in the amendatory act under which leases entered into by persons who thereafter go into military service may be canceled. An analysis of the amendatory act was prepared by the Bureau and published in THE JOURNAL for Oct. 17, 1942.

Additional funds were made available to the United States Public Health Service for a continuation of a program to provide reserves of blood plasma in hospitals, the reserves being established to meet any wartime contingency caused by enemy action which may necessitate blood transfusions to civilians.

During the second session of the recently adjourned Congress, the Bureau prepared monthly a factual analysis of federal legislation which was sent, in the form of a Federal Legislative Bulletin, to all state medical associations and to certain others. The purpose of the Bulletin is informative, to give basic information concerning the measures before Congress having a medical interest. The Bulletin will be continued. As heretofore while Congress is in session, the Bureau prepared weekly analyses of federal legislation which have been published in THE JOURNAL.

Seventy-Eighth Congress.—The new Congress convened on January 6 of this year and immediately a flood of legislative proposals appeared, many of which were identical with measures that failed of enactment in the Seventy-Seventh Congress. References to some of the more important of these proposals, important from a health standpoint, follow:

Female Physicians in the Medical Corps of the Army and Navy.—Companion bills, S. 720, introduced by Senator Johnson, Colorado, and H. R. 1857, introduced by Representative Sparkman, Alabama, provide for the appointment of female physicians and surgeons in the Medical Corps of the Army and Navy. During the present war and for six months thereafter, this legislation proposes, there shall be included in the Medical Departments of the Army and Navy such licensed female physicians and surgeons as the Secretary of War and the Secretary of the Navy may consider necessary. Female physicians so appointed will be commissioned in the Army of the United States or the Naval Reserves and will receive the same pay and allowances and be entitled to the same rights, privileges and benefits as members of the Officers' Reserve Corps of the Army and the Naval Reserve of the Navy, with the same grade and length of service. Appointees may be assigned only to duty in hospitals or other stations where female nurses are employed, but this suggested limitation has met with the opposition of the War Department and it is possible that the limitation will be stricken from the measure. The Secretary of War has indicated he has no objection to the enactment of the bill, and present indications point to early action with respect to this matter.

Under another bill to establish a Women's Army Auxiliary Corps for service in the Army of the United States, it would be possible to commission female physicians in the Army. That corps, at the present, has been described as a body of uniformed civilians which performs its duties with the Army but is not a part of it. The House Committee on Military Affairs, however, has agreed to amend this bill so as to exclude physicians and nurses from the WAAC and if female physicians are to be commissioned in the Army, other legislation must provide for it.

Medical Care for Wives and Infants of Enlisted Men.—President Roosevelt on February 1 submitted to Congress a supplemental estimate of appropriation for the Children's Bureau in an amount of $1,200,000 to be used during the fiscal year 1943 in making grants to states to provide medical, nursing and hospital maternity and infant care for wives and infants of enlisted men in the armed forces of the United States of the fourth, fifth, sixth or seventh grades. The requested appropriation has been included in a deficiency appropriation bill.

This new appropriation will permit a continuation, for the fiscal year 1943, of the program that was initiated by the Children's Bureau at the request of state health officers and financed so far by allotments totaling $390,177 from funds available under the maternal and child health section of the Social Security Act. Reports received by the Children's Bureau indicate that from August 1942 to February 1943 in the twenty-one states reporting, a total of 2,840 obstetric cases have been authorized for medical and hospital care under the program and the Children's Bureau has estimated, from the requests for funds received, that the amount submitted as a supplemental estimate by the President will be needed to finance the program during the remainder of the present fiscal year.

Legislation has been introduced to authorize an additional appropriation for each fiscal year during the period of the present war and for six months thereafter, but not in excess of $6,000,000 in any one year.

Attendance of Personnel of the Army as Students at Educational Institutions.—Legislative action has been completed on a bill under which during the present war and for six months thereafter personnel of all components of the Army of the United States may be detailed as students at technical, pro-

fessional and other educational institutions, or as students, observers or investigators at industrial plants, hospitals and other places. A law that was enacted by the Seventy-Seventh Congress authorized the detail as students of personnel of all components of the Army of the United States at technical, professional and other educational institutions but restricted the number of students so detailed not to exceed 2 per cent of the officers and 2 per cent of the enlisted men of the Army and implied that they should be distributed proportionately among the various branches of the Army.

The House Committee on Military Affairs pointed out in its report on the bill recently passed that modern warfare requires that our army be furnished a continuous flow of personnel trained along scientific and engineering lines, that to meet this requirement the War Department has established a specialized training program, and that the restrictions imposed by the law passed last year would hinder the development of the program.

Federal Medical Academies.—Two proposals have been submitted to the Congress under which federal medical academies would be established for the instruction of physicians for the armed forces or for the United States Public Health Service. One of these proposals, H. R. 691, was introduced by Representative Dickstein of New York and is pending in the House Committee on Military Affairs. This bill provides for the creation in each corps area of the United States of a medical training school for the instruction of physicians for the armed forces and for the United States Public Health Service. Each training school, it is proposed, will have a minimum of 295 students to be selected by members of Congress. On satisfactory completion of the course, the bill provides, candidates will be commissioned in the Army or Navy or in the United States Public Health Service, or any other service which may require their services. They must continue in such service for at least ten years unless the Secretary of War or the Secretary of the Navy, or the Surgeon General of the United States Public Health Service, as the case may be, shall certify that there is no further need for their services.

The other bill was introduced by Senator Thomas of Oklahoma, S. 655, and is pending in the Senate Committee on Military Affairs. It proposes to establish a United States Medical Academy to be operated under the supervision of the President for the training and instruction of persons in the manner which will best fit them for the performance of service as commissioned officers in the medical branches of the military and naval forces of the United States. In determining the manner in which the Academy will be operated, the President will, the bill provides, follow the rules, regulations and practices in effect with respect to the United States Military Academy at West Point or the United States Naval Academy at Annapolis. Persons who will receive training and instruction in the academy will be appointed by the President but they will be selected in the same manner, in the same number and by the same persons as in the case of midshipmen at the United States Naval Academy.

Reorganization of the United States Public Health Service; Temporary Promotions.—Companion bills are pending to effect a reorganization of the United States Public Health Service, S. 400, introduced by Senator Thomas, Utah, and H. R. 649, introduced by Representative Bulwinkle, North Carolina, and referred respectively to the Senate Committee on Education and Labor and to the House Committee on Interstate and Foreign Commerce. These bills, introduced at the request of the Federal Security Agency, propose that the United States Public Health Service shall consist of the Office of the Surgeon General, the National Institute of Health and two bureaus to be known as the Bureau of Medical Services and the Bureau of State Services. The Surgeon General of the United States Public Health Service, under the supervision and direction of the Federal Security Administrator, will be authorized to assign to the Office of the Surgeon General, to the National Institute of Health and to the two bureaus, respectively, the several functions of the Public Health Service and to establish such divisions, sections and other units as may be necessary.

The director of the National Institute of Health and the chiefs of each of the bureaus established will be commissioned medical officers detailed by the Surgeon General from the regular corps and while so detailed will be assistant surgeon generals and will have the same grade and receive the same pay and allowances as the assistant to the Surgeon General. Medical officers below the grade of medical director may be detailed by the Surgeon General from the regular corps to serve as chiefs of divisions, and not more than six of such officers at one time while so detailed shall have the temporary grade and receive temporarily the pay and allowances of a medical director.

The record of each commissioned officer of the regular corps initially appointed above the grade of assistant surgeon, after the first three years of service in such grade, will be reviewed under regulations approved by the President, and any such officer who is found to be unqualified for further service will be separated from the service and paid six months' pay and allowances. Original appointments in the commissioned corps of the Public Health Service may be to a junior grade which will correspond to that of a second lieutenant in the Medical Department of the Army and persons so appointed will be entitled to the same pay and allowances as second lieutenants in the Medical Department of the Army. After not less than two years of service each such appointee may be examined under regulations prescribed by the President and on such examination will be either promoted to the grade of assistant surgeon or be separated from the service. In the absence or disability of the Surgeon General and the assistant to the Surgeon General, or in the event of a vacancy in the office of both, the assistant surgeon generals will act as Surgeon General in the order of their designation for such purpose by the Surgeon General.

Provision has been made for temporary promotions in the United States Public Health Service by an amendment that was adopted to the deficiency appropriation bill, H. R. 1975. The amendment provides that during the existing war and for six months thereafter any commissioned officer of the regular corps of the Public Health Service may be appointed to higher temporary grade with the pay and allowances thereof without vacating his permanent appointment, and that reserve officers of the Public Health Service may be distributed in the several grades without regard to the proportion which at any time obtains or has obtained among the commissioned officers of such service. Similar authority exists for temporary promotions in the Navy, Army, Coast Guard and Coast and Geodetic Survey.

Pharmacy and Chiropody Corps in Army.—Pending legislation would strike from the National Defense Act all reference to the Medical Administrative Corps and in place thereof make provision for a Pharmacy Corps in the Medical Department of the Regular Army, to be composed of seventy-two officers. Companion bills have been introduced to accomplish this result, S. 216, introduced by Senator Reynolds, North Carolina, and H. R. 997, introduced by Representative Durham, North Carolina, and pending respectively in the Senate and House Committees on Military Affairs. Appointments in the Pharmacy Corps, it is proposed, will be made in the grade of second lieutenant from pharmacists between the ages of 21 and 32 years who are graduates of recognized schools or colleges of pharmacy requiring four years of instruction for graduation, under such regulations and after such examinations as the Secretary of War shall prescribe. An officer of the Pharmacy Corps will be promoted to the grade of first lieutenant after three years of service, to the grade of captain after six years of service, to the grade of major after twelve years of service, to the grade of lieutenant colonel after twenty years of service, and to the grade of colonel after twenty-six years of service.

There is considerable evidence that the sponsors of this proposal are energetically promoting its enactment. There have been inserted in the *Congressional Record*, for instance, from time to time copies of or references to memorials from state legislatures urging that the Congress promptly pass the legislation. Such memorials have been forwarded to Congress by

the legislatures of the states of California, Indiana, Iowa, Montana, New Hampshire, North Carolina, Oklahoma, Washington and, no doubt, others.

The creation of a Chiropody Corps in the Medical Corps of the United States Army is the objective of two pending bills, S. 654, introduced by Senator Reynolds, North Carolina, and H. R. 1990, introduced by Representative Hoch, Pennsylvania. This legislation contemplates that the Surgeon General of the Army shall appoint qualified officers in the proposed Chiropody Corps in like number to that established by law for the Dental Corps and that such officers shall have the rank, pay, promotion and allowances as well as the retirement provisions of officers of corresponding grades in the Dental Corps. Appointments in the Chiropody Corps will be made in the grade of first lieutenant and all appointees will be required to take similar physical examinations as provided for the appointment of officers in the Medical Corps, and a professional examination which will include tests of skill in practical chiropody and proficiency in the usual subjects taught in a standard chiropody college. An officer of the Chiropody Corps will be promoted to the grade of captain after three years of service, to the grade of major after twelve years of service, to the grade of lieutenant colonel after twenty years of service, and to the grade of colonel after twenty-six years of service. This legislation too would permit the establishment of a Chiropody Reserve Corps within the Medical Corps in accordance with the provisions of the National Defense Act, with rank, promotion, pay and allowance equivalent to that of the Dental Corps.

Vivisection in the District of Columbia.—There are pending, respectively, in the Senate and House Committees on the District of Columbia companion bills to prohibit experiments on living dogs in the District, S. 434, introduced by Senator Langer, and H. R. 33, introduced by Representative Burdick, both of North Dakota. These bills are identical in phraseology and provide that it shall be a misdemeanor for any person to experiment or operate in any manner whatsoever on any living dog, for any purpose other than the healing or curing of the dog, in the District of Columbia. Any person convicted of a violation of the proscription will be subject to a fine of not less than $100 nor more than $500, or imprisonment for a term of not less than three months nor more than one year, or both.

Chiropractors and the United States Employees' Compensation Act.—On the day after the new Congress convened, Representative Tolan, California, reintroduced his bill, H. R. 786, which if enacted would give chiropractors the right to treat the beneficiaries of the United States Employees' Compensation Act. A companion bill, S. 345, was introduced by Senator Murdock, Utah, for himself and Senator Gillette, Iowa. These bills are pending, respectively, in the House Committee on the Judiciary and in the Senate Committee on Education and Labor. At the time this report is being prepared, no action has been taken on either bill.

Cancer Control; Trench Fever Experiments; Influenza Epidemic.—Representative Rogers, Massachusetts, proposes by H. R. 661, pending in the House Committee on Interstate and Foreign Commerce, to authorize a federal appropriation for the first year of the operation of the bill in the amount of $2,300,000, and for each fiscal year thereafter such sum as may be necessary, to enable the United States Public Health Service to assist states, counties, cities or other political subdivisions to extend and improve measures through public and private institutions and organizations for the diagnosis, treatment and control of cancer. The measure contemplates the establishment of hospitals, diagnostic clinics and other facilities for the diagnosis and treatment of persons suffering from cancer or suspected of suffering from the disease. The sums to be appropriated will be allotted to such states as have plans for the control of cancer that have been approved by the Surgeon General of the United States Public Health Service. To the extent that facilities may be available, not to exceed 100 persons suspected of having cancer or known to have that disease may be cared for in hospitals operated by the United States Public Health Service for purposes of diagnosis, treatment and clinical study.

A bill introduced by Representative Lane, Massachusetts, and pending in the House Committee on Military Affairs, H. R. 1391, proposes to authorize the President to issue an appropriate medal and ribbon to be awarded to designated members of the armed forces of the United States during the World War who acted as voluntary subjects for experimentations during the trench fever investigations in France.

Another bill, H. R. 655, introduced by Representative Ludlow, Indiana, and pending in the House Committee on Coinage, Weights and Measures, would authorize the Secretary of the Treasury to cause to be struck a medal of appropriate design with suitable emblems, devices and inscriptions to be determined by the Secretary of the Treasury, or a certificate suitable for framing, to commemorate the faithful nursing of the women who voluntarily offered their services and who served with the Army during the influenza epidemic of 1918.

Extension of the Social Security Program.—The President has submitted to the Congress the Report of the National Resources Planning Board, copies of which are not available as this report is being prepared. That the report contains much of important concern to the medical profession, however, is evident from the discussions of it that have appeared in the newspapers. Apparently the board recommends far reaching expansions in the Social Security program, expansions to include permanent and total disability insurance, action by the federal government in cooperation with the medical profession to enable every person to budget medical expenses over a reasonable period, federal aid in developing a system of regional and local hospitals, and other measures to assure "adequate medical and health care for all, regardless of place of residence or income status." Initial reaction on the part of Congress to the board's report, as reflected in the newspapers, presages extended consideration of the recommendations. An analysis of the parts of the report of interest to medicine will be carefully prepared when the report becomes available.

In the meantime there are pending in Congress many proposals to extend and expand the Social Security Act. Patterned after the Eliot bill introduced in the Seventy-Seventh Congress and analyzed by the Bureau in THE JOURNAL, Sept. 26, 1942 is a Senate bill, S. 281, introduced by Senator Green, Rhode Island. This bill, pending in the Senate Committee on Finance, would, among other things, provide insurance benefits for workers permanently and totally disabled and hospitalization benefits and would authorize the Social Security Board to "make provisions" for the furnishing of medical, surgical, institutional, rehabilitation or other services to individuals entitled to disability benefits if such services will aid in enabling the individuals to return to gainful work. Individuals who are hospitalized would be entitled to a hospital benefit of not less than $3 a day and not more than $6. In lieu of the payment of the hospital benefit directly to the individual, the Social Security Board might make arrangements with accredited hospitals for the payment of the reasonable cost of hospital service. No committee action has been taken on this bill.

Other measures would extend the old age and survivors' insurance benefits to employees of religious, charitable, scientific, literary and certain other corporations or associations, would provide for aid to permanently and totally disabled individuals, would extend the old age benefits provisions to male or female registered, graduate, undergraduate or practical nurses in respect of their employment outside of religious, charitable and other nonprofit institutions, would provide grants to states for aid to the physically handicapped and would create a Joint Committee on Social Security to be composed of designated members of the Senate Committee on Finance and of the House Committee on Ways and Means to make studies with respect to the needs and advisability of modification or enlargement of the present social security program and to consider proposals submitted to Congress in connection therewith. No action has been taken on any of these proposals.

Construction of Hospital Facilities.—The creation of a special committee of the House of Representatives is proposed by a pending resolution, H. Res. 147, submitted by Representative O'Connor, Montana, to (1) investigate the hospital problem throughout the United States, including a survey of all hospital

beds available to all persons engaged in warfare, (2) investigate the use of existing civilian hospital facilities, (3) study the hospital problem in the United States as a whole as affecting not only war industries but industries in general and (4) report in writing to the Congress the results of such investigations together with recommendations. This resolution is pending in the House Committee on Rules.

The construction of marine hospitals in California, Florida and Oregon is proposed by other legislation. Eight bills have been introduced providing either for the enlargement of existing veterans' hospitals or the construction of new hospitals in Connecticut, Florida, Michigan, Pennsylvania, Rhode Island and Washington. A general veterans' hospital construction measure has been introduced by Representative Rogers of Massachusetts which would authorize such sums as may be necessary to enable the Administrator of Veterans' Affairs to provide additional hospital and outpatient dispensary facilities for persons entitled to hospitalization and medical treatment under the laws administered by the Veterans' Administration "to care for the rapidly increasing load of disabled war veterans and to enable the Veterans' Administration to care for its beneficiaries in Veterans' Administration facilities rather than in contract temporary facilities and other institutions." This bill, H. R. 667, is pending in the House Committee on World War Veterans' Legislation.

Another measure, which has the approval of the Senate Committee on Naval Affairs, would appropriate the sum of $2,000,000 to expand the facilities for hospitalization of dependents of Naval and Marine Corps personnel and for certain other persons. As explained by the Senate committee, the dependents of Army, Navy and Marine Corps personnel are now entitled by law to hospital and dispensary care. Hospitalization of dependents is restricted to acute medical and surgical conditions, exclusive of nervous, mental or contagious diseases or those requiring domiciliary care. Existing facilities have been adequate for this service to dependents in peacetime, but an expansion of such facilities is necessary to provide the service during a period of war. This bill too will authorize the hospitalization in naval hospitals of certain classes of civilians outside the continental United States. A companion bill, H. R. 1936, has passed the House.

Vocational Rehabilitation; Civilian War Benefits.—On Oct. 9, 1942 President Roosevelt, in a special message to the Seventy-Seventh Congress, advocated an expanded rehabilitation program in relation both to veterans and to civilians who are physically handicapped. A number of bills were introduced in that Congress but no action taken on them. In the present Congress, many bills of this character are pending. One, extending the benefits of vocational rehabilitation to veterans of the present war, has passed the Senate and House (S. 786). Another measure, submitted by Senator LaFollette of Wisconsin, S. 838, relates to the rehabilitation of persons disabled in war industries or otherwise, the rehabilitation to be furnished under the supervision of a Rehabilitation Service to be established in the Federal Security Agency. Under this bill the Federal Security Administrator will be authorized to make rehabilitation services available to certain civilians who are disabled as a result of activities connected with the war effort by certifying such civilians to a state where such services will be provided under a state plan at federal expense. The bill too amends existing law under which federal aid is now furnished to the states for vocational rehabilitation programs. It would increase federal aid to the states.

To the extent and for such period as adequate rehabilitation services are not made available by a state, the bill would authorize the Federal Security Administrator to provide such needed services through contractual arrangements with public and private agencies and individuals. Except in the case of individuals certifiable as war disabled civilians, no physical restoration or repair, medical care, prosthetic or other devices or training allowances may be provided by a state plan to an individual unless it has been determined that he needs financial assistance with respect thereto. In those instances in which the bill would authorize the Administrator of the Federal Security Agency to supply rehabilitation services, that official will be required to provide the physical restoration and repair, physical and occupational therapy, and hospitalization and medical care solely through contractual arrangements made by him with public and private agencies and private individuals. He would have no authority to construct, lease or otherwise acquire or operate any hospital, clinic or other medical facility. No person employed by the administrator under the authority contained in the bill will be authorized to engage in rendering medical or hospital care or treatment to any individual.

A number of bills have been introduced to provide benefits for civilians who sustain war injuries and for civilian defense workers who are injured while in the performance of duty or who contract a disease proximately caused by the performance of stated duties. One of these, S. 450, introduced by Senator Pepper, Florida, proposes benefits for the injury, disability, death or enemy detention of civilians in the form of monetary payments and the supplying of medical services. The administrator of the Federal Security Agency would be authorized to supply doctors' and nurses' services, drugs and other medicines, prosthetic and other appliances, hospitalization and other reasonable services for treatment and care to the extent that he may prescribe in regulations. The actual cost of such benefits may be paid directly or by way of reimbursement to any person entitled to such benefits or may be paid to the person furnishing such benefits. The bill provides that the administrator may use any private facilities or such government facilities as may be available for the treatment and care of any persons entitled to benefits provided in the bill. No action has been taken on this bill or any other of the pending bills having a similar objective.

Mobilization of Scientific Resources.—Predicated on the premise that the full development and application of the nation's scientific and technical resources are necessary for the effective prosecution of the war and for peacetime progress and prosperity, a number of bills are pending in the Congress under which an Office of Scientific and Technical Mobilization would be established to mobilize the scientific and technical resources of the nation. While these proposals apparently relate primarily to industrial research and problems, they are framed in broad language and may, if enacted, influence the future of scientific research conducted in educational institutions that relates primarily to medicine.

The federal agency to be created by one of these bills, S. 702, sponsored by Senator Kilgore of West Virginia, would be authorized, in regard to scientific and technical facilities and personnel, to mobilize, assemble, coordinate, develop, aid, encourage and protect research, provide guidance and standardize. Physicians and dentists are excluded from the term "scientific and technical personnel" but corporations, whether operating for profit or not, associations, schools, colleges and universities are expressly brought within the field of operation of the bill.

To finance this program, an initial appropriation of $200,000,000 is suggested and thereafter such sums as may be necessary. Legislation similar to that pending was submitted to the Seventy-Seventh Congress and extensive hearings held but no action taken. The Kilgore bill has broad implications and merits continued and careful study.

Miscellaneous.—This report would be unduly extended if other than the briefest reference was made to other proposals of interest to medicine that have been submitted to Congress. It must suffice to say, in conclusion, that a large number of bills suggest additional benefits to veterans of World War I and similar benefits to veterans of World War II. Others contemplate service pensions for contract surgeons of the Spanish-American War, water pollution control, prevention of alteration of fingerprints, medical and hospital care for certain civilians, education and employment of physically handicapped persons, identification insignia for rejectees with physical defects and income tax exemption of persons in military service. To paraphrase an old adage, Many are introduced but few are passed.

Summary

Medicolegal Abstracts.—An adequate index to Medicolegal Cases, Volume Three, has been completed and the book is now available.

Barbiturates.—Efforts are continuing to stimulate the enactment of legislation limiting the sales of the barbiturates to sales on prescriptions.

Medical Licensure and the War.—Many licensure problems have arisen in connection with the acceleration of medical courses, the relocation of physicians, the proposed acceleration of premedical education and the suggestion for shortening the internship period. Annual registration requirements may impose hardships on physicians in service. These problems have received the attention of the Bureau.

Courses in Medical Jurisprudence.—A survey has been initiated to assemble data concerning courses in medical jurisprudence offered in accredited medical schools. This study will be continued.

Legal Medicine in Philadelphia.—An important development in Philadelphia in the field of legal medicine occurred during the year that may well set a pattern worthy of emulation elsewhere.

The Narcotic Tax.—The requirement that checks in payment of the tax imposed on physicians by the Harrison Narcotic Act be certified results from a law enacted by Congress and can be modified only by amendatory legislation.

The New Income and Victory Tax Law.—The Revenue Act of 1942 imposes an additional tax burden on physicians but effects no change in the deductions that may be claimed for professional expenses. The injustice heretofore existing in the treatment of uncollected accounts on the books of a taxpayer at the time of death has been eliminated. A new provision authorizes taxpayers to deduct medical expenses. The new victory tax provisions impose additional obligations on physicians.

Scientific Tests for Intoxication.—Scientific tests for intoxication have received recognition by the legislatures and by the courts. A special committee of the National Safety Council has been created to formulate a model law, and a member of the Bureau's staff is serving on that special committee.

The Physician-Patient Relationship.—The Model Code of Evidence adopted by the American Law Institute recognizes the privileged status of the physician-patient relationship.

State Legislation.—Little legislation of medical interest was enacted by state legislatures in 1942. Medical practice acts were amended in New Jersey, New York and Virginia. In Arizona the osteopathic act was amended to permit the practice of surgery by osteopaths in hospitals osteopathically owned or controlled. A new definition of chiropody was enacted in New Jersey. The premarital examination law of Maine was amended to authorize out of state physicians to execute certificates of freedom from disease. Narcotic drug acts in Kentucky and New York were amended further to restrict the sale of attenuated preparations. The sulfonamide compounds were put on a prescription basis in Virginia. The nursing practice act of New York was modified for the duration of the war. Venereal diseases were made reportable in Michigan and a cash sickness insurance program was adopted in Rhode Island.

Federal Legislation.—During the second session of the Seventy-Seventh Congress laws were enacted authorizing federal loans to students in medical and certain other schools, regulating the growing of the opium poppy and the manufacture of opium, providing for the employment of female dietetic and female physical therapy personnel in the Army, authorizing the cancellation of leases executed by persons who thereafter enter the armed forces, and continuing the program to provide blood plasma reserves. The publication of the Federal Legislative Bulletin was continued.

Pending in the Seventy-Eighth Congress are bills for the commissioning of female physicians in the Army and Navy. Appropriations have been made available to supply medical care to wives and infants of enlisted men. The attendance of an unlimited number of personnel of the Army as students at educational institutions has been authorized. The construction of federal medical academies is the objective of pending bills. The creation of Pharmacy and Chiropody corps in the Army has been proposed.

The reorganization of the United States Public Health Service is contemplated by bills introduced at the request of the Federal Security Agency. Animal experimentation in the District of Columbia will be unlawful if proposed legislation is enacted. The Tolan bill to authorize chiropractors to treat the beneficiaries of the United States Employees' Compensation Act has been reintroduced. Additional funds for cancer control and the recognition of services rendered in the trench fever experiments and in the influenza epidemic are proposed by bills awaiting action.

A broad expansion of the Social Security program is suggested in the Report of the National Resources Planning Board. Pending legislation would authorize benefits, including medical care, for the permanently and totally disabled, would make available hospitalization benefits, would bring within the provisions of the Social Security Act employees now excluded therefrom and would in other ways broaden the benefits available at present.

Other legislation would increase hospital facilities in marine hospitals, for veterans, for dependents of Naval and Marine personnel and for certain civilians.

A broadly expanded program for vocational rehabilitation of disabled persons has been advocated by the President, and legislation to effect that end is before Congress for consideration. Legislative action has been completed to provide for vocational rehabilitation of veterans of World War II. Pending legislation would provide benefits, including medical care, for civilians who sustain war injuries and for civilian defense workers.

The mobilization of the scientific resources of the nation is the objective of pending legislation which merits careful and continued study. Other Congressional bills would provide additional benefits for veterans, service pensions for contract surgeons of the Spanish-American War, water pollution control, medical and hospital care for certain civilians, prevention of alteration of fingerprints, education and employment of physically handicapped persons, identification insignia for rejectees, and income tax exemption of persons in military service.

Bureau of Medical Economics

Early in 1940 the Office of the Surgeon General of the Army, anticipating the demands that would be made for medical personnel should a national emergency develop, prepared a tentative procurement plan and presented it to the House of Delegates of the American Medical Association at its annual session held in New York in June of that year. The plan, which was endorsed in principle by the House of Delegates, contained the following items:

1. The American Medical Association to be asked to conduct a survey of the medical profession through its state and local activities.

2. Each local or county society to canvass its members to determine, of those who expressed a willingness to serve, who should be available for the military service and who, on account of their age, physical disability or commitment in civil capacities, should remain at home.

3. The county society to give to each one who expressed his willingness to serve, even though he might be selected to remain at home, a button similar to that which was designed for the Volunteer Medical Service Corps during the last war.

4. The county society to list those who were selected for the military service according to their professional qualifications, listing as surgeons, psychiatrists, and so on, only those who

were members in the national specialists' organizations. Also to select from those who were to remain at home qualified men for examination boards.

5. The state societies to maintain an available roster of members.

6. The American Medical Association to maintain a numerical roster of availability by states.

7. The Medical Department of the Army to have one or more selected officers on duty at the headquarters of the American Medical Association in Chicago.

8. The War Department, corps areas or regional officers to call on the American Medical Association for physicians or specialists as and when required.

9. The American Medical Association to call on the states, according to their quotas, for the physicians required.

10. Each state, in turn, to call on its local societies for its quota of physicians.

At the same session of the House of Delegates a resolution calling for the creation of a Committee on Medical Preparedness was introduced by Dr. Arthur W. Booth, chairman of the Board of Trustees, and was adopted by the House of Delegates. Authorization of this Committee on Medical Preparedness and the endorsement of the Surgeon General's plan for procurement demonstrated again the willingness of the American Medical Association to place its records and resources at the disposal of the federal government for whatever service might be helpful to the Surgeon Generals of the Army, Navy and Public Health Service in a national emergency.

CENSUS OF PHYSICIANS

Ever since 1909 the American Medical Association has published at short intervals information which has been essentially a census of the medical profession, but the census growing out of the creation of the Committee on Medical Preparedness was the most complete and far reaching of any heretofore attempted. The Bureau of Medical Economics was designated as the agency to conduct the census and from its headquarters sent out, during the summer of 1940, special questionnaires to the entire medical profession of the United States. These questionnaires, when returned to the Bureau of Medical Economics, were the source of the detailed and highly valuable data suggested. The process of collecting this census information extended through the second half of 1940 and through much of the year 1941. At the close of 1941, either a completed schedule had been received or an incomplete schedule had been prepared and filed for every known physician in the United States, both continental and territorial, including the Philippines. The original list of physicians, which was completed sometime before the close of 1941, has since undergone frequent and extensive revisions to meet the wartime requirements of the Army, the Navy and the civilian population.

In addition to the greatly enlarged staff working on this material, first in sending it out and then in editing and processing it as it was returned to the Bureau, members of the state medical associations and county medical societies and chairmen of the state committees on medical preparedness gave most valuable and indispensable assistance throughout the conduct of the census. In view of the countless hours this work took from their medical practice, these men deserve the sincere appreciation of the entire medical profession.

During the years 1940 and 1941 it was necessary, to meet the rapidly changing conditions, to make extensive changes in the personnel of the clerical staff of the Bureau of Medical Economics. As it became evident that an increasingly larger percentage of the work of the temporary staff of the Bureau of Medical Economics would need to be devoted to military affairs, a more equitable arrangement of administrative and financial details was effected through conference with Col. Charles G. Hutter, M. C., who had been detailed to the American Medical Association as liaison officer by the surgeon of the Sixth Corps Area.

PROCUREMENT AND ASSIGNMENT SERVICE

The Procurement and Assignment Service for Physicians, Dentists and Veterinarians, which was established with the approval of the President of the United States as a part of the Office of Defense Health and Welfare Services, was organized in October 1941. In order that the information that had been assembled in the Bureau of Medical Economics by the Committee on Medical Preparedness might be fully utilized by the Procurement and Assignment Service, the Bureau was named the Consultant Office of the Service, and the director of the Bureau was designated as supervisor of that office. This arrangement continued from October 1941 until near the close of 1942, when it was deemed advisable to effect a physical separation of the office of the Procurement and Assignment Service and the Bureau of Medical Economics. Accordingly, after the Bureau of Medical Economics had carried on its own work for two and one-half years with a minimum of personnel, a branch office of the Procurement and Assignment Service was established at the American Medical Association headquarters with Lieut. Col. Harold C. Lueth, M. C., who had succeeded Col. Charles G. Hutter as liaison officer of the Sixth Corps Area, in charge.

The census of physicians, conducted by the Committee on Medical Preparedness, is a reservoir of most interesting and valuable data relating to the prewar medical profession of the United States, but for the duration this reservoir will have to be left very largely unstudied except as it pertains to the present needs of the armed forces and the civilian population. However, as the work progressed from the period of census taking in 1940 and 1941 to the establishment of the Procurement and Assignment Service, certain facts became evident: All the original estimates of the number of physicians required for all purposes in the war effort had to be increased, some highly important specialist groups were greatly overtaxed, maintenance of arbitrary quotas was both difficult and unwise, and the civilian population would be compelled to accustom itself to a smaller quantity and a different type of medical care.

Although the census was conducted for the first year against the background of the European war, had the war not come to this country the census would still have been of the great value suggested earlier in this report, since it gave the American medical profession detailed information about every physician in this country. The size of the task, however, greatly limited the other work of the Bureau of Medical Economics during the latter half of 1940 and all of 1941.

Beginning with Pearl Harbor, the American Medical Association, along with other groups in the country, turned its energies to the war effort. In spite, however, of the tremendous task of analyzing and digesting the mass of data contained in the census and in spite of the added pressure of work caused by the creation in the Bureau of the Consultant Office for the Procurement and Assignment Service, the Bureau of Medical Economics was able to continue that phase of its peacetime work which had to do with the analysis of prepayment plans for medical care.

PREPAID MEDICAL SERVICE

From time to time in the past several years the Bureau of Medical Economics has prepared for the medical profession descriptive material and critical analyses of different types of medical organizations designed to meet a variety of needs and conditions. These descriptive and analytic accounts have been published for the information and use of any interested individuals or groups. Among the subjects covered are "Contract Practice," "New Forms of Medical Practice," "Medical Service Plans," "Group Medical Practice," "Medical Care for Migratory Workers" and "Organized Payments for Medical Services." These descriptive and analytic reports apply to a considerable number and variety of actual operating arrangements.

Medical societies in different parts of the United States have repeatedly helped to develop methods to solve some particular problem. The part played by medical societies in the organization and operation of medical service plans should be mentioned in this category. The unit method of payment used by the medical service bureaus of the state of Washington appears to have been one of the earliest arrangements of the kind in the United States.

It is important to note that in Washington and Oregon medical service bureaus using a unit system arrangement for prepayment were developed by medical societies in an effort to overcome evils that had grown up under contract practice of an earlier date.

This unit method of payment has been fully described in "Organized Payments for Medical Services." It is important to note here that much of the success of the Washington plan, as it was called at that time, rested on:

1. A voluntary association of physicians known as the "county medical service bureau."

2. A nonprofit corporation, the county medical service corporation which contracted with employers to provide medical and surgical care and other services for its employees.

3. An agreement between the corporation and the physicians of the county medical service bureau for the provision of medical and surgical services.

By the summer of 1941 some twenty state medical societies had taken steps toward the introduction of a medical service plan to operate over the entire state. In Washington and Oregon, while there is some statewide supervision, the initiative remains with the county medical societies that have organized medical service bureaus.

The following organizations were developed with the active support of the respective state medical societies after intensive studies had been conducted and with earnest desire to develop truly helpful plans:

California: California Physicians' Service, San Francisco.
New York: Medical and Surgical Care, Inc., Utica.
Medical Expense Fund of New York, Brooklyn.
Western New York Medical Plan, Inc., Buffalo.
New Jersey: Medical-Surgical Plan of New Jersey, Newark.
Michigan: Michigan Medical Service, Detroit.
Pennsylvania: Medical Service Association of Pennsylvania, Harrisburg.
Colorado: Colorado Medical Service, Denver.
North Carolina: Medical Service Association of North Carolina, Durham.
Massachusetts: Massachusetts Medical Service, Boston.

In 1935, when the Bureau of Medical Economics presented its report to the House of Delegates on the number and nature of social experiments then being conducted by the medical profession, some two hundred or more different methods had been proposed for the organization of such services. The experiments were so diverse that even an enumeration was considered difficult.

Although many of the details of organization and administration must differ widely, there are some fundamentals that ought to characterize all medical service plans. A part of the Special Report of the Bureau, approved by the House of Delegates in 1935, seems no less applicable today than at that time:

UNDESIRABLE TENDENCIES IN SOME PLANS

"In designing the operating plans to provide medical care for the low income groups, county medical societies may well consider the dangerous, destructive and unethical tendencies which even the most carefully conceived and constructed plans may assume. Some of these may follow an incomplete or inaccurate preliminary estimate of the medical situation; some may result from the unpredictable factor of human nature; others may follow as the natural outcome of changes in the general economic conditions entirely beyond the control of the medical profession. Regardless of the causative factors, which may vary in different communities, county medical societies must be prepared to recognize and deal with complications affecting the organization of medical care under the specifications of a county plan just as their members are trained to deal with complications which often occur to change the course of the diseases which they treat. Some of these dangers and complications are:

DANGERS TO BE AVOIDED

"1. The adoption and operation of a medical plan where it is unnecessary.

"2. The stimulus aroused by good plans among irresponsible organizers to develop and operate imitations and counterfeits.

"3. The establishment in medical practice of dangerous patterns following the adoption of undesirable types of plans.

"4. The compromise of medical societies in the corporate practice of medicine or in the operation of insurance companies as a result of an insufficient study of state statutes and case law.

"5. Failure, in the operation of a plan, to conform to the Principles of Medical Ethics.

"6. The almost inevitable transition of voluntary insurance plans into compulsory contributory sickness insurance systems operated by the state.

"7. The difficulties involved in the failure adequately to provide for complete control of medical affairs by the medical profession.

"8. The 'freezing' of medical fees at a point below that which is consistent with good medical care.

"9. Failure to bear constantly in mind that a medical society plan is an experiment in the methods of distributing medical service and that it may have only a temporary usefulness, may need frequent or drastic modifications or may need to be discarded entirely.

"10. Medical society plans must not be considered or accepted as a substitute for the regular practice of medicine as applied to the majority of people. If it is believed such plans may be useful, they should be considered merely as supplementary facilities in the distribution of medical service. They should be used only so long and in such a manner as they serve efficiently to make more easily available to low income groups a high quality of medical care.

VITAL FACTORS TO BE RECOGNIZED AND PROTECTED

"Regardless of the sincerity of those who devise and operate a good medical plan, such a plan may only stimulate counterfeits promoted by irresponsible people. Competition between medical plans inevitably reduces the quality of the service and disturbs the public confidence.

"The Medical Profession, in its professional associations, is the only possible body that can organize the supply and distribution of that service without harmful effects on, and possible destruction of, that service itself. This principle has already been accepted in all countries by the establishment of systems of licensure, medical education and other standards of medical service set up by the profession to protect the public. It is recognized in the decisions of courts restricting the furnishing of such service to those who have met professional standards and in the rulings that expert evidence concerning medical matters can be given only by those who have met such standards.

"This situation is not changed in any essential way by the fact that the progress of medical science and art has caused the creation of many subsidiary organizations and much mechanical and scientific equipment. All these things center around and are dependent on the medical profession. The 'point of production' of medical service is where the individual physician meets the individual patient. Hospitals are built and conducted to create the best possible environment for that contact. Laboratories are maintained to improve the conditions of that contact. Nurses, social workers and others concerned have a similar function.

"It therefore follows that in any plan to improve the adjustment of the relations between these two economics the medical profession must retain a central position in all that concerns the valuation and delivery of medical service. There is another practical reason why this must be true. While each of the other elements involved plays an important part, the common element without which no one nor all of them can function in the delivery of service is the physician. Just as he is the central and the essential element at the point of production of medical service, so he must exercise a position of leadership and control in any reorganization of the methods of giving that service. The profession needs, and will always welcome, the cooperation and advice of all elements affected in health problems, but just as the individual physician must constantly assume the tremendous responsibility of decisions that involve life and death with individual patients, so the profession as a whole must assume the leadership and responsibility in the organization of medical service in the community."

Two types of reports can be prepared to show the nature and growth of medical service plans. Each has its value, but the one which deals with specific phases of organization and administration should be more helpful to administrators in widely separated areas having very different problems. It is proposed in supplemental reports, therefore, to keep these discussions as informal as possible and to reduce to a minimum the statistical tables and analyses which do not have a direct

relation to the descriptive part of the reports. It is hoped, on the other hand, to be able to include, with the assistance of experienced field staffs, explanations of the reasons for the differences in administrative procedures.

EXPERIENCE WITH MEDICAL SERVICE PLANS

The comparatively short experience of medical society service plans has already taught many valuable lessons. These lessons are offered here in tentative form for study and as aids to further experimentation.

Comparatively little can be learned from plans controlled by other than medical agencies or from many elaborate studies of the costs of medical service. Some medical society plans have been required to give subscribers three or four times as much medical service as the Committee on the Costs of Medical Care estimated would be needed. Actuarial calculations based on the experience of lay-managed groups, cooperative or industrial plans or foreign experience with compulsory sickness insurance are often misleading. Some of these organizations may balance their books, to some extent at least, by restricting the amount or lowering the quality of the medical care given usually without the full knowledge of the subscribers.

A medical society plan cannot so deceive its subscribers. The first sentence of the "Ten Principles," adopted in 1934 by the House of Delegates of the American Medical Association, reads "All features of medical service in any method of medical practice should be under the control of the medical profession." Professional control involves responsibility for the quality of the medical service. This responsibility must not be evaded in any plan organized and operated by a medical society.

There are many "unknown quantities" in the equation that must be solved to insure even the financial stability of a medical society prepayment plan. Existing morbidity statistics and theoretical estimates of medical service needed, drawn from private practice or lay-managed prepayment plans, are not a sound basis for such calculations. Most of the unknown quantities are human characteristics, calling for a knowledge of social psychology as well as of mathematics. We can now at least list and examine some of these:

1. The offering of a prepayment medical service the quality of which is guaranteed by the medical profession increases the demand for medical care much more than any one anticipated. Compulsory sickness insurance and lay-administered medical service plans do not create a demand for medical service, even among their subscribers, which is as adequate to the need as does private practice. This has been shown in morbidity and mortality statistics and in the failure to discover incipient disease among those served by such schemes. Economic inhibitions perhaps cause some persons to demand less medical service from private practice than they sometimes need. Malingering and excessive demands for unnecessary medical care under various forms of sickness insurance have often been described. Professionally administered plans, as will be pointed out later, suffer from a somewhat different aspect of this same weakness.

The demand for services under prepayment plans may show a different pattern from what has been established in private practice. The report of the Michigan Medical Service surgical plan for 1941 reveals that the largest "number of patients per thousand enrolled" demanded service through the months of April to August inclusive, a condition contrary to the generally accepted seasonal variation in illness. Hospital insurance plans have an excess of hospitalization during vacation periods. Such phenomena are illustrations of the well known but often overlooked fact that need and demand for medical services are not the same. Calculations of the cost of medical care that omit this fact are misleading.

2. The reaction of the public as shown in sales resistance has an important effect on the success of the plan. Premiums must be within the limits of the valuation placed by the average person on the preservation of his health. Few persons have made the sort of calculations of the money value of medical service which all consumers are erroneously supposed to make for all the goods they desire to purchase. Such calculations are harder to make for medical services than for tangible goods. Sickness and injuries are seldom foreseen, and their seriousness and duration cannot be foretold. Specific, definite medical benefits cannot readily be promised or price tagged.

3. Actuaries, physicians or consumers cannot determine accurately the effect of various contract provisions on the minds of possible purchasers of prepayment medical care. What will be the exact effect of the exclusion of preexisting conditions, for example, on the cost of the plan or the health of the subscriber? Will such provisions make selling the plan easier or more difficult? It will take experience and analysis to determine the financial, medical and psychologic effects of such a comparatively simple factor as a "deductible clause" requiring payment for the first visit or of a cash limit on the amount of service given during a year.

4. Some subscribers to a prepayment plan will always be trying to "get something back" for their money. If this tendency becomes contagious it may throw the most careful actuarial calculations out of line. This human characteristic may be met in many ways, some of which are a brusque refusal of requested care, setting up rules and restrictions, or perhaps, worst of all, giving superficial diagnosis and treatment to all in the effort to "spread" the medical resources. Some or all of these methods are almost "standard practice" under compulsory sickness insurance. None is suited to a professionally administered plan. Experience with some of the Farm Security Administration plans possibly offers a suggestion. Here financial resources make it necessary to limit the amount spent for medical services. This fact has sometimes been explained by the administrators and ways pointed out by which the available medical care can be made most helpful to all the subscribers. A similar campaign of public education is now being conducted by state and county medical societies to make the best possible use of the reduced civilian medical resources during the war. It may be well to borrow the lesson of these experiments, but always remaining entirely frank with the subscriber.

There is danger in this method also. It may cause subscribers to neglect seeking medical care when needed. It may lead administrators of medical care plans to follow the example of compulsory sickness insurance and lay-administered plans and assume that it is the function of managers of medical plans to guard medical service from subscribers. The objective should be to guard against abuse and encourage use—a narrow path, hard to follow, but the only one that makes the available medical service most valuable to those who need it.

5. Some physicians assured of payment through a medical plan may perform unneeded surgical procedures that may be of little benefit to the patient. The solution of this problem is a professional responsibility. A medical society that dodges it has failed in one of its fundamental functions in relation to medical service plans. Some medical society plans have met this problem through "medical directors," "medical advisory committees" or similar agencies that have the courage to meet the situation and are backed by fearless and efficient medical organizations. Failure to curb this tendency promptly not only may destroy the financial stability of a medical service plan but may greatly weaken public respect for the profession.

6. The type of clientele served, while less significant in determining conditions of success of service plans, does have an important if sometimes indirect influence. Will that clientele be dominantly industrial, commercial, rural, in occupational groups or widely dispersed? Since group enrolments seem essential to avoid adverse selection, the character of the group, especially with regard to sex, age and environment, must be considered. The wide diversity which exists in these respects in the United States shows how impossible it is to construct a "model plan" or to lay down many generalities applicable to all plans even in such a limited group of states as, for example, Massachusetts, Mississippi, North Dakota and Texas.

Little consideration has been given as to how comprehensive prepayment medical plans should or may become. Existing plans have been largely confined to industrial groups in urban centers. They must be far wider in coverage if they are to occupy the field to such an extent as to obviate universal compulsory action by government. Restricted coverage is probably desirable and necessary in the early stages, but, as with almost every social institution, the problem of where it is going must

never be lost from view. California Physicians' Service has already extended its scope into several new fields. It supplies medical care to migratory workers and groups of assisted farmers under the Farm Security Administration, to an experimental rural plan of the Interbureau Coordinating Committee on Post War Programs and the U. S. Department of Agriculture, to a housing project, to war industries, and has considered entering the field of university health care. The New Jersey medical plan is organized for similar extensions of scope but has not been in existence long enough to permit any conclusions.

Every expansion into a new field will include subscribers whose income, environment and customs cause them to place different values on medical care. New methods of approach and perhaps of organization and of administration and service may have to be developed.

7. Closely allied to the problem of expansion is that of income. In the beginning there seemed to be unanimous approval of the ninth of the "Ten Principles," which reads "Systems for the relief of low income classes should be limited strictly to those below the 'comfort level' standard of incomes." Opinions differed on the income indicating a "comfort level," but the first plans usually placed it somewhere between $2,000 and $3,000 per family annually. The selling program soon met the fact, well known to sociologists, that every group, including the employees of an industry, has a solidarity which resists efforts to break it up into income or other groups. The "key men" in all the minor groups of an industry, who are also the "key men" in any selling program, had no interest in a plan which excluded them. Consequently, some of the recently organized plans have set up no income limits. Whether such a cutting of the Gordian knot is a solution remains to be determined.

8. The question of income limits has a bearing on the comparative desirability of "indemnity" or "service" benefits. Experience has as yet given no decisive answer to this question, but the tendency to change from a "complete" to a "surgical" service has led to a proposed combination of the two plans to meet the other problem of income limits. When, under the "surgical" plan, service is given to hospitalized patients, the distinction is based on whether ward or private room care is elected by the patient. The contract covers service in wards, and the patient who takes a private room is assumed to be able to contribute something in payment for his care, just as he does for his private room under the terms of hospital insurance. Therefore, while the prepayment covers the full cost of service in a ward, it is paid only as an "indemnity" toward the cost of service in a private room, and the physician is entitled to make an additional charge.

COMPLETE SERVICE VS. SURGICAL PLAN

Perhaps the difficulty of calculating the actuarial effect of the human elements involved is one reason why most of the original "complete medical service" plans are changing to plans limited to surgical and obstetric care for hospitalized patients. It early became evident that an unlimited medical care plan involved a greater expense than can be met by any premiums the public is at present willing to pay. In the case of those for whom the plans were especially designed, this cost is perhaps more than they can pay without restricting other expenditures, some of which may be as necessary to health maintenance as medical service. There was also difficulty in controlling excessive demands, often for unneeded service, and of too great willingness by a few physicians to grant such demands.

The "surgical and obstetric" plans simplify many of these problems. Restricting service to hospital patients selects "catastrophic" cases and eliminates most "minor" diseases. It is not a perfect screen for this purpose. Surgical and obstetric procedures in hospitals are more specific than general treatment at home, and more easily fit into actuarial calculations. Much can be said for the argument that such a plan really meets the most urgent needs of the subscribers. Treatment of minor illnesses (the "bagatelle diseases" that plague all systems of compulsory sickness insurance) usually do not require an expense beyond the resources of a moderate income. Such restricted service corresponds to the customs and environment of the urban industrial worker who looks to hospital treatment for serious sickness. Limiting care to hospitalized patients also makes it possible to reduce overhead cost by arrangements with existing hospitalization plans for solicitation and record keeping. This interlocking of administrative work has led to some conflicts and difficulties and has encouraged movements on the part of hospital groups to include medical service in hospitalization plans.

In spite of the adoption of surgical plans, it seems to be recognized that they do not fully meet the need of subscribers for medical care. Such plans do not cover all the "catastrophic" diseases. They limit medical care plans largely to urban districts, since hospitals are less available and less patronized in rural districts and rural towns. They do not provide for preventive measures like the early diagnosis of incipient disease and tend to discourage prompt use of medical service when it may be most useful. No one disputes these defects, and they afford no indictment of such plans. Complete medical service remains the ideal, but to urge its immediate installation may be a counsel of unattainable perfection.

The public has not yet been educated to recognize the value and the cost of a complete service, medical and surgical, and it has been deceived as to cost by the propaganda for compulsory sickness insurance and for lay-administered plans. Many such plans have led their clients to believe that comprehensive service is being given by existing schemes, or could be given by proposed plans, for much less than its actual cost.

The first step, the omission of which has caused some stumbling, would seem to be more adequate education of the public to the real values of a complete medical service, with greater emphasis on its actual cost. That this ideal has not been overlooked, even by medical societies that have started with a limited plan, is seen from the following statement in the Report of the Special Committee to the Massachusetts Medical Society house of delegates: "Your committee urges a gradual approach to our ultimate ideal—total medical coverage by a comprehensive policy—through well defined initial steps of partial coverage."

SOME THINGS LEARNED

A prepayment plan for medical care is complex. It touches closely nearly all emotions, prejudices and customs in our society. It lacks the experience and evolution common to most social institutions. Compulsory sickness insurance systems in every country, and throughout their entire history, have been subject to continuous changes. In spite of their anchorage to legislation and government regulation, none as yet show any signs of approaching equilibrium. It is therefore not surprising that plans of such duration as those of medical societies in the United States are still largely experimental.

A few questions seem to have found at least a temporary answer. A longer educational period is necessary before a complete medical service can be furnished with financial security. Several quantities in the equation "premiums = cost of service" are still unknown, but experiments are searching out and measuring most of these without endangering the financial structure. We know that there must be some flexibility in income limits. Selling is a bigger problem than anticipated; there is no such public demand for prepayment of medical services as advocates of private and government schemes have claimed. Professional supervision of all the standards of medical service must be made one of the dominant features of prepayment services as it has always been of private practice. The protection of the subscribers, the financial security of the plans and the honor of the profession demand this.

In nearly every country in which free discussion is permitted, the organization of medical care is one of the most debated subjects. The effect of proposals of the medical profession on any development depends on their definiteness and the unity and promptness with which they are presented.

MEDICAL SERVICE PLANS OF THE FARM SECURITY ADMINISTRATION

The medical care plan is only a part of the general program of the Farm Security Administration which was started in 1935 with the announced purpose of "helping low income farmers to get a greater degree of independence and security." This general program is based on a system of federal loans accompanied by assistance in farm management and in the organization of local resources.

The first plans were started after only a minimum of consultation with organized medicine and varied widely in many of their features. A few were legal corporations, some were "farmer cooperatives" dealing with medical societies and occasionally with salaried physicians. Sometimes loans were issued to individual families to pay for specific services. Contracts were, in some localities, made with groups of physicians. This diversity involves no criticism. Given the existing state of knowledge or, better, ignorance of the factors involved in the problem of organizing any general plan of providing medical service, it was necessary to proceed by "trial and error" with a certainty that there will be no lack either of "trials" or of "errors" on the part of those conducting the experiment. These experiments did demonstrate that any successful plan of medical care must rest on constant consultation and close cooperation with the physicians who give that care and with the medical societies which alone represent the medical profession.

The Farm Security Administration has now adopted a policy of close cooperation with state and county medical societies and is pledged not to introduce any plan against the opposition of these groups.

The House of Delegates of the American Medical Association has laid down the principles which determine its policy. The first of these is the foundation of all the others. It reads "All features of medical service in any method of medical practice should be under the control of the medical profession." No complaints that this principle is infringed in any Farm Security Administration plan have been reported. This would seem to be the most general and basic test of the acceptance by the medical profession of any of the present plans of payment for medical service. All other phases may be subject to bargaining and compromise, but any yielding of control of the standards of medical care to those who are unqualified to exercise that control is a betrayal of the trust which has been confided to the medical profession.

VITAL REPORTS AND RECORDS

Each decennial census of the United States provides an unusual wealth of data, the most complete and reliable statistical data of the decade. Ordinarily the census data are accompanied with a detailed explanation which greatly enhances the value of the tabulations. Much of the census bureau work is of such great importance in many fields that the loss or interruption of even a relatively small part of the basic tables and discussion may be irreparable. In view of their value and importance in many fields, it is hoped that it will not become necessary to discontinue the compilation and publication of these basic statistical tables because of lack of funds.

Since vital records and reports are dependable and helpful just to the extent that such records are complete, accurate and honestly made, any vital records system is valuable to this and succeeding generations only to the extent that integrity becomes a part of such records and reports and the subsequent use of them.

Summary

The census of physicians begun in 1940 by the Bureau of Medical Economics was given over entirely to army and civil service personnel at the close of the calendar year 1942.

Reasonably complete information is now available pertaining to ten medical service plans, most of which are organized to operate over statewide areas. The exceptions are in New York, in which state three organizations are operating although even more have made a start at different times.

The demand for prepaid medical care, with quality guaranteed by the medical profession, is increased when offered on a prepayment basis.

Public reaction shown as sales resistance has an important bearing on the success of various kinds of medical service.

Actuaries, physicians or consumers cannot determine accurately the full effect of various contract provisions on the minds of possible purchasers of prepaid medical care.

Some subscribers to prepayment plans will always try to get something back for the dues or rates charged.

Some physicians when assured of payment for services will engage in surgery that may be of little value to the patients treated.

Closely allied to the problem of expansion of the plans is that of the income level of the subscribers.

The question of income limits has a bearing on the relative desirability of "indemnity" or "service" benefits.

The public has not been educated to recognize the value and the cost of a complete service, medical and surgical.

Professional supervision of all the standards of medical service must be made one of the dominant features of prepayment services as it always has been of private practice.

The medical service plans which were started in about 1935 with the announced "purpose of assisting low income farm families to get a greater degree of independence and security" are being conducted in accordance with the principle that "all features of medical service in any method of medical practice should be under the control of the medical profession."

Unless a sufficient amount of money is made available to the census bureau, it is feared that some important basic census publications cannot be made available for even limited distribution.

Bureau of Investigation

During 1942 the Bureau of Investigation continued its part in the educational activities of the American Medical Association. The work of the Bureau consists primarily in receiving and dispensing information concerning "patent medicines," quacks, frauds, fakes and faddists to physicians, laymen, government agencies, Better Business bureaus, business corporations, newspapers, radio stations and high school and college students who are making studies of such material.

Since the enactment of the Food, Drug and Cosmetic Act of 1938 and the Wheeler-Lea Amendment to the Federal Trade Commission Act there has been a gradual decrease in the number of inquiries received by the Bureau, particularly from physicians. This is most largely due to the fact that, in accordance with the provisions of the new laws, active ingredients are declared on labels. On the other hand, inquiries from students and teachers have doubled, presumably because of the increased amount of consumer study being conducted in both the high schools and the colleges of the nation. Education of this age group would seem to be a far greater service than the supplying of physicians with the names of ingredients of remedies. Inquiries from Better Business bureaus, newspapers and magazines and government agencies have been constant since the enactment of the legislation referred to. Items inquired about during 1942 totaled 8,400, the leading specific subjects of inquiry being in regard to a cathartic, a cold remedy, an antacid, aspirin and a "headache cure." These leading subjects represent less than 38 per cent of the total number of subjects about which inquiries were received.

The Bureau of Investigation contributed eight original articles to THE JOURNAL during 1942 and, in addition, seven presentations of abstracts of Cease and Desist Orders and ten of abstracts of Stipulations issued by the Federal Trade Commission, nine articles containing abstracts of Notices of Judgment issued by the Food and Drug Administration and twelve articles containing abstracts of Fraud Orders issued by the United States Post Office Department. The original articles referred to were prepared largely by the Director, who also prepared various other items for publication in THE JOURNAL, while the articles consisting of abstracts of various actions of federal agencies were prepared by the Assistant Director.

During the year 1,775 pamphlets issued by the Bureau were distributed, and lantern slides and a film strip of these slides were supplied to physicians and educators on request.

The Director of the Bureau made nine addresses to lay audiences and professional groups during the year. The Bureau has continued its efforts to be helpful to various agencies of

government and to civic organizations and has made information in the files of the Bureau available to officials concerned with various phases of the war effort. In addition, the Director of the Bureau has aided the Council on Pharmacy and Chemistry as editorial supervisor of Useful Drugs, The Epitome of the U. S. Pharmacopeia and National Formulary and the A. M. A. Interns' Manual. He has continued in the capacity of secretary of the Association's Committee on Cosmetics and has completed one year of service as Assistant to the Secretary of the Association.

Summary

During the past year the Bureau of Investigation has continued its efforts to maintain the work which was instituted in 1906, supplying to the profession and the public information obtained from all possible sources with regard to subjects which fall under its purview. As the result of recent federal legislation, inquiries from physicians have lessened, but inquires from students have gradually risen in a four year period from 12 per cent to 28 per cent. The importance of education of this age group is self evident.

The Director made nine talks and addresses to professional and lay audiences during the year and cooperated as fully as possible with representatives of various government agencies and civic organizations. Contribution of articles to The Journal by the Bureau was maintained at the same level as during the previous year.

Bureau of Exhibits

The Bureau of Exhibits during the year 1942 continued its activities in graduate medical education with the Scientific Exhibit at the Atlantic City session, with exhibits from the Association headquarters at state medical meetings and other scientific meetings and with medical motion pictures. Health education for lay groups was carried on with health exhibits from the Association headquarters and with motion pictures.

THE SCIENTIFIC EXHIBIT

The Scientific Exhibit at the Atlantic City session exceeded all expectations both in the number of exhibits available and in the caliber of the work presented. The difficulties of preparation and transportation of exhibits and the problem of participants suddenly called into active military service or kept at home by an excess of work interfered less than had been anticipated. A considerable number of exhibitors who already were in the service of the armed forces were able to attend the Atlantic City meeting and demonstrate their exhibits. The emphasis of the Scientific Exhibit, however, was not primarily on the war but more on the problems of the physician in general practice.

The 1942 annual session was noted for the participation of physicians from Latin American countries. There were eighteen exhibits listed from those countries, including five from Argentina, four from Brazil, one from Chile, two from Colombia, one from Peru, two from Mexico and three from Cuba. Because of transportation difficulties only thirteen exhibits were actually shown, and of these one received a gold medal and one a certificate of merit. Certificates of participation were presented to the remaining eleven exhibitors.

The problems of medicine in wartime were presented by members of the United States Army, the United States Navy, the United States Public Health Service, the Selective Service System, the Office of Civilian Defense and the Procurement and Assignment Service. Other government agencies were represented by members of the Bureau of Mines and the Children's Bureau.

Features of the meeting were two special exhibits sponsored by the Committee on Scientific Exhibit of the Board of Trustees. The special exhibit on fractures was shown for the thirteenth time over a period of seventeen years and attracted even larger audiences than in previous years. Dr. Kellogg Speed, Chicago, was chairman of the special exhibit committee. The special exhibit on backache was shown for the third time and proved more popular than ever. The exhibit was presented with the cooperation of a large committee, of which Dr. Frank R. Ober, Boston, was chairman.

Each of the sixteen sections of the Scientific Assembly sponsored groups of exhibits dealing with the various specialties of medicine as they are encountered by the physician in general practice. Each section appointed a representative to the Scientific Exhibit to act in an advisory capacity and to assist with the program. These section representatives were of inestimable help and deserve much credit for the high quality of material obtained.

Motion pictures were shown continuously throughout the week in four motion picture theaters. No films were shown in exhibitors' booths, thus preventing the blocking of aisles. Each film was shown once each day on a regular schedule.

Awards were made to forty-three exhibits, including six medals, twelve certificates of merit, twelve honorable mentions, eleven certificates of appreciation and two special certificates of merit. The Committee on Awards, of which Dr. Harold S. Diehl, Minneapolis, was chairman, performed its task with perseverance and credit.

ASSOCIATION EXHIBITS

Association exhibits include exhibits which depict the activities of the various councils and bureaus of the Association and closely allied subjects in which those departments are interested. During the year nineteen new exhibits were produced and two old exhibits discontinued, making fifty-six exhibits now available for loan purposes. There are twenty-five medical exhibits for use at medical and other scientific meetings, twenty-one health exhibits for fairs and expositions, and ten exhibits which can be used for either group. Medical exhibits were sent to twenty-three meetings in twelve states. Many of the meetings used two or more exhibits, making the total medical exhibits lent during the year forty-four. A considerable number of reservations for exhibit material were canceled because of cancellation of meetings or unexpected curtailment of programs. Health exhibits were presented on thirty-five occasions in seventeen states, a total of forty-nine exhibits being used. Many of the state fairs and other large gatherings which ordinarily use much exhibit material were canceled in 1942, thus reducing the demand for exhibits.

Active cooperation with museums has been continued in accordance with the action of the House of Delegates at the New York session. Permanent exhibits have been maintained at the Cleveland Health Museum, the Chicago Museum of Science and Industry and the Toledo Museum of Science. At the Cleveland and Chicago museums the question and answer service, which was established in 1940, has been as popular as ever. Answers to questions are sent by mail through the cooperation of the Bureau of Health Education. The American Museum of Health in New York has postponed opening permanent quarters until after the war, but the exhibit material from the American Medical Association which was shown at the New York World's Fair has been lent to the Cleveland Health Museum for display. Other museums with which the Bureau has cooperated in health displays include the Public Museum at Grand Rapids, Mich., the Valentine Museum at Richmond, Va., and the Tower of Health at Madison, Wis.

MOTION PICTURES

Motion pictures fall into two groups, medical films for medical societies and other scientific groups and health films for lay groups. Numerous requests are received for information concerning such films, and much time is consumed in keeping files up to date. Several hundred new medical pictures, only a small proportion of which are available for general distribution, are made each year. Health films are sponsored by many national and state organizations. The total number of health films for public showing is much smaller than the list of medical films.

The Bureau of Exhibits has prepared no general list of motion pictures, but, as requests are received for information concerning pictures on specific subjects, lists are compiled according to the needs of the inquirer. The film library now consists of twenty-six titles, three of which were added during the last year. There are seven on physical therapy and six on anes-

thesia, miscellaneous subjects making up the remainder. Six of the pictures are suitable for public showings. It will be necessary to add materially to the list of films during the coming year to meet the demand from county medical societies. During the year two hundred and forty-five films were sent out to one hundred and fifty meetings in thirty states. Army camps are using motion pictures to an increasing extent for groups of medical officers.

PUBLICATIONS

Booklets and pamphlets prepared by various special exhibit committees under the sponsorship of the Bureau of Exhibits include the Primer on Fractures, Fundamentals of Anesthesia, Varicose Veins and Food Charts. Many thousands of copies have been distributed. The fifth edition of the Primer on Fractures is being prepared for publication in 1943.

Summary

The Scientific Exhibit at the Atlantic City session was notable for the participation of physicians from the Latin American countries and for the presentation of war problems by the Army, Navy and other governmental agencies. There was a total of two hundred and sixteen exhibits, including special exhibits on fractures and backache, and demonstrations on poliomyelitis and diabetes. Four motion picture theaters were in continuous operation, showing seventy-eight films each day.

Association exhibits for loan purposes were sent out ninety-one times to fifty-eight meetings in nineteen states. During the year nineteen new exhibits were added, making a total of fifty-six now available for loan. Museums continued to be the recipients of loan exhibits, active cooperation being maintained with such institutions in six states. Motion pictures in the film library number twenty-six. They were sent out two hundred and forty-five times to one hundred and fifty meetings in thirty states. Many hundreds of requests for information concerning motion pictures on particular subjects were answered. Books and pamphlets prepared originally for use in the Scientific Exhibit have been distributed through the Order Department, the most popular being the Primer on Fractures, Fundamentals of Anesthesia and Food Charts.

Committee on Student Health

In compliance with suggestions offered by government officials, the Board of Trustees has appointed a Committee on Student Health. The members of this committee are Dr. Joseph E. Raycroft, Princeton, N. J., chairman; Dr. Ruth E. Boynton, Minneapolis; Dr. Arlie V. Bock, Cambridge, Mass.; Dr. Frank B. Kelly, Chicago, and Dr. O. N. Andersen, Stanford University, Calif.

This committee has had two meetings, one in Washington and one in Chicago, and is now engaged in formulating working plans.

Committee on Conservation of Vision

The following Committee on Conservation of Vision has been appointed by the Board of Trustees: Dr. Conrad Berens, New York City; Dr. J. V. Cassady, South Bend, Ind.; Dr. E. C. Ellett, Memphis, Tenn.; Dr. Harry S. Gradle, Chicago; Dr. R. S. Irvine, San Francisco, and Dr. Lawrence T. Post, St. Louis.

Because of existing conditions incident to the war, this committee has not completed its plans. When it is possible for the committee to perfect the necessary organization of committees in various states and compile necessary data, official reports will be submitted to the Board of Trustees and, through the Board, to the House of Delegates.

Supplementary Report

A supplementary report dealing with various matters referred to the Board of Trustees by the House of Delegates, which cannot be prepared in time for inclusion in the Handbook, will be submitted to the House of Delegates at this meeting. Other matters referred to the Board of Trustees are covered in sections of this Report of the Board of Trustees pertaining to the activities of councils and bureaus.

Respectfully submitted.

ROGER I. LEE, Chairman.
ERNEST E. IRONS, Secretary.
WILLIAM F. BRAASCH.
E. L. HENDERSON.
RALPH A. FENTON.
JAMES R. BLOSS.
C. W. ROBERTS.
EDWARD M. PALLETTE.
R. L. SENSENICH.

ADDENDA TO REPORT OF BOARD OF TRUSTEES

Report of the Committee on Scientific Research for 1942

In 1942 thirty-one new grants have been made, amounting to $14,980, in response to forty applications. Thirty-five grants have been closed. In all cases full accounting has been made of the finances. In the case of twenty-four of these grants, reports of results of the work have been published or arrangements made for their publication. In the case of eleven closed grants (nine grantees) no results have been published. On account of the war three grants were closed shortly after payment (grants 639, 642 and 645, 1942). The work under forty-one grants prior to 1942 is incomplete; in most cases active

FINANCIAL STATEMENT FOR 1942

Balance, Jan. 1, 1942	$ 9,404.61
Appropriation for 1942	13,700.00
Special Cardiac Research Fund	1,000.00
Refund, grant 445	61.70
Refund, grant 481	15.22
Refund, grant 510	58.38
Refund, grant 548	9.21
Refund, grant 584	128.21
Refund, grant 595	148.86
Refund, grant 505	79.40
Refund, grant 618	.13
Refund, grant 639	350.00
Refund, grant 614	57.39
Refund, grant 643 (Cardiac Fund)	446.57
Refund, grant 645	200.00
	$25,659.68

GRANTS AND EXPENSES PAID IN 1942

Grant 623, Catharine Macfarlane	$2,500.00
Grant 624, Hans Popper	300.00
Grant 625, Ervid Rodnieche	500.00
Grant 626, Peter P. H. de Bruyn	400.00
Grant 627, Francis J. Braceland	500.00
Grant 629, Daniel J. Glomset	500.00
Grant 630, Wesley W. Spink	300.00
Grant 631, L. R. Cerecedo	500.00
Grant 632, A. M. Lassek	300.00
Grant 633, Oliver P. Jones	250.00
Grant 634, I. M. Tarlov	500.00
Grant 635, Reginald Fitz	200.00
Grant 636, A. McGhee Harvey	500.00
Grant 637, John R. Paine	620.00
Grant 638, Charles W. Turner	600.00
Grant 639, Ben Vidgoff	350.00
Grant 640, Barnett Sure	400.00
Grant 641, Paul Thomas Young	500.00
Grant 642, Deborah V. Dauber (Cardiac Fund)	500.00
Grant 643, Milton Mendlowitz (Cardiac Fund)	500.00
Grant 644, Jacob Rabinovitch	240.00
Grant 645, Robert M. Virtume	200.00
Grant 646, Frederick M. Allen	500.00
Grant 647, Walter Schiller	250.00
Grant 648, Meyer M. Harris	250.00
Grant 649, Arthur H. Smith	200.00
Grant 650, Tuberculosis Committee, Minnesota State Medical Association, J. A. Myers, Chairman	1,000.00
Grant 651, Roger M. Reinecke	300.00
Grant 652, Oliver P. Jones	570.00
Grant 653, Ulrich Friedemann	750.00
Clerical expense	600.00
Committee travel expense	287.70
	$15,867.70
Balance December 31, 1942	$ 9,791.98

work is in progress and in many cases reports have been published. In some cases work has been interrupted by war service. Certain research aided by grants from the committee is now carried forward by governmental agencies. During the year, unexpended balances of twelve grants have been refunded.

Special Cardiac Research Fund.—A donor, who must remain unnamed, has placed a special fund of $1,000 in charge of the committee to aid cardiac research by young physicians in medical practice (see grants 642 and 643, 1942).

The financial summary for 1942 is presented; also brief accounts of the grants closed during the year, of pending grants from previous years and a list of the grants made in 1942.

Respectfully submitted.

COMMITTEE ON SCIENTIFIC RESEARCH OF THE AMERICAN MEDICAL ASSOCIATION.

E. W. GOODPASTURE, Nashville, Tenn.
Term expires, 1947.

LUDVIG HEKTOEN, Chicago.
Term expires, 1946.

MARTIN H. FISCHER, Cincinnati.
Term expires, 1945.

N. W. JONES, Portland, Ore.
Term expires, 1944.

JOHN J. MORTON, Rochester, N. Y.
Term expires, 1943.

GRANTS OF COMMITTEE ON SCIENTIFIC RESEARCH

NEW GRANTS—1942

Grant 623: Catharine Macfarlane, Womens Medical College of Pennsylvania, $2,500, value of periodic pelvic and breast examination in detecting cancer. See grants 494 and 536, 1938 and 1939.

Grant 624: Hans Popper, Cook County Graduate School of Medicine, Chicago, $300, vitamin A in tissues. See grant 604, 1941.

Grant 625: Enid Rodaniche, University of Chicago, $500, study of chemotherapeutic agents on intestinal flora in infectious conditions.

Grant 626: Peter P. H. de Bruyn, University of Chicago, $400, study of osteogenic substance in laying birds.

Grant 627: Francis J. Braceland, Loyola University School of Medicine, Chicago, $500, carbohydrate disturbances in schizophrenia.

Grant 628: Robert P. Ball, Columbia University, $500, roentgen pelvimetry. Grant not paid because grantee entered military service.

Grant 629: Daniel J. Glomset, Des Moines, Iowa, $500, cardiac conduction—disturbances of ventricular conduction.

Grant 630: Wesley W. Spink, University of Minnesota, $300, nutrition and immunology of staphylococci.

Grant 631: L. R. Cerecedo, Fordham University, $500, vitamin B deficiency of rats and mice.

Grant 632: A. M. Lassek, Medical College of South Carolina, $300, retrograde degeneration in the pyramidal tract. See grant 593, 1940.

Grant 633: Oliver P. Jones, University of Buffalo, $250, effect of antianemic principle on embryonic blood cells.

Grant 634: I. M. Tarlov, Jewish Hospital, Brooklyn, $500, study of plasma clot in suture of nerves in monkeys.

Grant 635: Reginald Fitz, Peter Bent Brigham Hospital, Boston, $200, how does hyperthyroidism begin clinically?

Grant 636: A. McGhee Harvey, Vanderbilt University School of Medicine, $500, secretion of thymus.

Grant 637: John R. Paine, University of Minnesota, $620, study of oxygen poisoning.

Grant 638: Charles W. Turner, University of Missouri, $600, mechanism of lactation.

Grant 639: Ben Vidgoff, University of Oregon Medical School, $350, morphology of endocrine and secondary sex organs in male white rat.

Grant 640: Barnett Sure, University of Arkansas, $400, vitamin B complex. See grant 601, 1941.

Grant 641: Paul Thomas Young, University of Illinois, $500, appetite and food preferences in the rat. See grant 619, 1941.

Grant 642: Deborah V. Dauber, Michael Reese Hospital, $500, atherosclerosis in the chick. (Cardiac Research Fund.)

Grant 643: Milton Mendlowitz, Mount Sinai Hospital, New York, $500, digital circulation. (Cardiac Research Fund.)

Grant 644: Jacob Rabinovitch, Jewish Hospital, Brooklyn, $240, effect of heparin on thrombosis.

Grant 645: Robert M. Virtue, University of Denver, $200, sulfur metabolism in cystinuric dogs.

Grant 646: Frederick M. Allen, New York Medical College, $500, local refrigeration in surgery. See grant 615, 1941.

Grant 647: Walter Schiller, Cook County Hospital, Chicago, $250, ovarian tumors. See grant 532, 1939.

Grant 648: Meyer M. Harris, New York State Psychiatric Hospital, $250, further research on muscular disease. See grant 606, 1941.

Grant 649: Arthur H. Smith, Wayne University College of Medicine, Detroit, $200, metabolism of citric acid. See grant 606, 1941.

Grant 650: Tuberculosis Committee, Minnesota State Medical Association, J. A. Myers, chairman, $1,000, tuberculosis survey of Meeker County, Minn.

Grant 651: Roger M. Reinecke, University of Minnesota, $300, carbohydrate metabolism of the kidney.

Grant 652: Oliver P. Jones, University of Buffalo, $570, erythropoietic action of extract of human stomach. See grant 633, 1942.

Grant 653: Ulrich Friedemann, Jewish Hospital, Brooklyn, $750, types of tetanus toxin. See grant 583, 1940.

STATE OF GRANT-AIDED WORK

1. GRANTS CLOSED DURING THE YEAR

A. RESULTS PUBLISHED OR READY FOR PUBLICATION

Grant 474, 1937: Marion Fay, Woman's Medical College of Pennsylvania, $275, biochemistry of strontium. See grant 552, 1939. Fay, Marion; Andersch, M. A., and Behrmann, V. G.: The Biochemistry of Strontium, *J. Biol. Chem.* **144:** 383, 1942.

Grant 445, 1937: Paul M. Levin, Johns Hopkins University, $250, cerebral efferent tracts in primates. Refund $61.70. Levin, P. M.: A Nervous Structure in the Pineal Body of the Monkey, *J. Comp. Neurol.* **68:** 405, 1938. Levin, P. M., and Bradford, F. K.: The Exact Origin of the Corticospinal Tract in the Monkey, *ibid.* **68:** 411, 1938.

Grant 503, 1938: R. C. Robb, Syracuse University College of Medicine, $800, diseases in twins. The results will be published in a monograph.

Grant 510, 1938: Erma A. Smith, Iowa State College, $150, influence of various substances on gastrointestinal motility. Refund $58.38. Smith, Erma A., and Penrod, K. E.: Gastrointestinal Motility in the Albino Rat After Administration of Amphetamine Sulfate, *Proc. Soc. Exper. Biol. & Med.* **47:** 418, 1941.

Grant 532, 1939: Walter Schiller, Cook County Hospital, Chicago, $200, ovarian tumors. Schiller, Walter: Liver Cell Fat Necrosis Caused by Pancreatic Reflux, *Surg., Gynec. & Obst.* **72:** 70, 1941. Schiller, Walter: The Histogenesis of Ovarian Mesonephroma, *Arch. Path.* **33:** 443, 1942. See grant 647, 1942.

Grant 539, 1939: Albert V. Hardy, Columbia University, $500, Shigella dysenteriae. Hardy, A. V.: The Mouse Mucin Test in the Study of Shigella, to be published in *Public Health Reports.*

Grant 552, 1939: Marion Fay, Woman's Medical College of Pennsylvania, $250, biochemistry of strontium. See grant 474, 1937. Fay, Marion; Behrmann, V. G., and Buck, D. M.: The Parathyroids and the Clearance of Inorganic Phosphate, *Am. J. Physiol.* **136:** 716, 1942.

Grant 560, 1939: B. S. Kline and H. P. Lankelma, Western Reserve University, $500, chemical study of antigens. Wellman, J. W., and Lankelma, H. P.: Purification of the Antigen of Syphilis, *Ven. Dis. Inform.* **22:** 12, 1941.

Grant 562, 1939: Joseph H. Roe, George Washington University, $350, vitamin C requirements of man. Kuether, Carl A., and Roe, J. H.: Determination of Ascorbic Acid in Whole Blood, *Proc. Soc. Exper. Biol. & Med.* **47:** 467, 1941. Roe, J. H.; Hall, J. M., and Dyer, H. M.: Relation of Nutrition to Gastric Function: II. The Effect of Vitamin C Deficiency, *Am. J. Digest. Dis.* **8:** 261, 1941. See grant 507, 1938, Report of Committee for 1940.

Grant 579, 1940: Harry C. Rolnick, Michael Reese Hospital, Chicago, $200, effect of trauma on the response of the kidney to sudden blockage. Sobin, S. S.; Aronberg, L. M., and Rolnick, H. C.: The Nature of the Renal Lesion Caused by the Sulfonamides and Its Prevention with Urea. Accepted for publication by *American Journal of Pathology.*

Grant 585, 1940: Howard Curl, University of Tennessee, $400, roentgenologic study of the normal gallbladder. Curl, Howard: High Fat Diet Preceding Cholecystography, a Review of the Literature and Experimental Studies on Filling the Normal Gallbladder, *J. A. M. A.* **119:** 607, 1942.

Grants 590 and 597, 1940: David Polowe, Paterson, N. J., $150 and $100, pancreatic function test. See grant 597, 1940. Polowe, D.; Ratish, H. D., and Bullowa, J. G. M.: Measurement of Blood Amylase Activity by Cuprous Oxide Precipitation, *Am. J. Clin. Path.* **12:** 62, 1942.

Grant 593, 1940: A. M. Lassek, Medical College of the State of South Carolina, $300, origin of the pyramidal tract in the monkey. Lassek, A. M.: The Effect of Pre- and Postcentral Cortical Ablations on the Fibers of the Pyramids in Monkeys, *J. Nerv. & Ment. Dis.* **95:** 721, 1942. See grant 632, 1942.

Grant 596, 1940: Israel Davidsohn, Mount Sinai Hospital, Chicago, $400, bacteriogenic hemagglutination. See grant 569, 1940. Davidsohn, I., and Toharsky, B.: Bacteriogenic Hemagglutination: II, *J. Immunol.* **43:** 213, 1942.

Grant 600, 1941: W. R. Tweedy, Loyola University School of Medicine, Chicago, $125, effect of magnesium deficient diet on serum phosphatase activity in albino rat. Snyder, F. H., and Tweedy, W. R.: The Effects of a Magnesium-Deficient Diet on the Serum Phosphatase Activity in the Albino Rat, accepted for publication by *Journal of Biological Chemistry.*

Grant 601, 1941: Barnett Sure, Agricultural Experimental Station, Fayetteville, Ark., $600, new factor in vitamin B complex essential for reproduction and lactation. See grant 640, 1942. Sure, Barnett: Dietary Requirements for Fertility and Lactation: XXX. Role of p-Aminobenzoic

Acid and Inositol in Lactation, *Science* **94:** 167, 1941; Dietary Requirements for Fertility and Lactation: XXIX. The Existence of a New Dietary Factor Essential for Lactation, *J. Nutrition* **22:** 499, 1941.

Grant 604, 1941: Hans Popper, Cook County Graduate School of Medicine, Chicago, $350, study of vitamin A and lipoids by fluorescence microscopy. See grant 624, 1942. Meyer, Karl A.; Popper, Hans, and Ragins, A. B.: Histologic Distribution of Vitamin A in Biopsy Specimens of the Liver, *Arch. Surg.* **43:** 376, 1941. Popper, Hans, and Chinn, Herman: Changes of Vitamin A Distribution in Choline Deficiency, *Proc. Soc. Exper. Biol. & Med.* **49:** 202, 1942. Popper, Hans, and Brenner, Sadie: The Fate of Vitamin A Stores During Depletion: Value of the Histologic Demonstration of Vitamin A, *J. Nutrition* **23:** 431, 1942. Cornbleet, Theodore, and Popper, Hans: Properties of Human Skin Revealed by Fluorescence Microscopy: The Normal Skin; the Vitamin A Content of the Skin, *Arch. Dermat. & Syph.* **46:** 59, 1942. Popper, Hans; Steigmann, Frederick, and Dyniewicz, H. A.: Distribution of Vitamin A in Experimental Liver Damage, *Proc. Soc. Exper. Biol. & Med.* **50:** 266, 1942. Meyer, K. A.; Popper, Hans; Steigmann, Frederick; Walters, W. H., and Zevin, Sol.: Comparison of Vitamin A of Liver Biopsy Specimens with Plasma Vitamin A in Man, *ibid.* **49:** 589, 1942.

Grant 606, 1941: Meyer M. Harris, Psychiatric Institute, New York, $250, food factors in muscular disease. See grant 648, 1942. Harris, M. M.: Negative Therapeutic and Metabolic Effects of Synthetic Alpha-Tocopherol (Vitamin E) in Muscular Dystrophy, *Am. J. M. Sc.* **202:** 258, 1941.

Grant 610, 1941: H. O. Burdick, Alfred University, Alfred, N. Y., $125, the effect of desoxycorticosterone acetate on pregnancy. Burdick, H. O.: Effect of Progesterone on the Ovaries and Embryos of Mice in Early Pregnancy, *Endocrinology* **30:** 619, 1942.

Grant 614, 1941: George Gomori, University of Chicago, $400, enzymes in tissue sections. Gomori, George: Histochemical Reactions on Lipid Aldehydes and Ketones, accepted for publication by *Proceedings of the Society for Experimental Biology and Medicine;* Calcification and Phosphatase, accepted for publication by *American Journal of Pathology.*

Grant 615, 1941: Frederick M. Allen, New York Medical College, $500, reduced temperatures in surgery. Allen, F. M.: Reduced Temperatures in Surgery: III. Experiments on Pelvic and Abdominal Refrigeration with Especial Reference to Traumatic and Military Surgery, *Am. J. Surg.* **55:** 451, 1942. See grant 646, 1942.

Grant 618, 1941: H. M. Weaver, Wayne University College of Medicine, $200, pain on distention of the stomach. Refund $0.13. Weaver, H. M.: Pathways for Pain from the Stomach in the Dog, accepted for publication by *Archives of Neurology and Psychiatry.*

Grant 622, 1941: Timothy Leary, Office of Medical Examiner, Boston, $75, illustrations for article on atherosclerosis. See grant 471, 1937. Leary, Timothy: The Genesis of Atherosclerosis, *Arch. Path.* **32:** 507, 1941.

B. No Results Published

Grant 254, 1932: J. Lisle Williams, Rush Medical College, Chicago, $200, decreased dextrose tolerance in acute infectious diseases.

Grants 310, 1934, and 462, 1937: Lay Martin, Johns Hopkins University, $150 and $200, gastric juice. The research is receiving support from other sources.

Grant 355, 1935. Royall M. Calder, San Antonio, Texas, $150, mechanism of pneumococcic inflammation.

Grant 480, 1937: Amy L. Daniels, State University of Iowa, $250, relation of fluorine to physiologic function. Illness prevents completion of the work.

Grants 527, 1938, and 577, 1940: Alexander Levy, University of Oregon Medical School, $300 and $200, collateral circulation in occlusion of the coronary arteries.

Grant 542, 1939: Kendall B. Corbin, University of Tennessee, $200, alterations in the hip after deafferentation. No changes were noted in partially deafferented shoulder or hip joints of monkeys kept for periods varying to as long as eighteen months in duration. The monkeys gradually died of tuberculous infection. Under the circumstances, and because of the possibility that positive results might appear in animals kept for a longer time, it is thought best to postpone publication of the results until further experiments can be carried out.

Grant 639, 1942: Ben Vidgoff, University of Oregon Medical School, $350, morphology of endocrine and secondary sex organs of male white rat. Grant returned because increase in teaching prevents research.

Grant 643, 1942: Milton Mendlowitz, Mount Sinai Hospital, New York, $500, digital circulation (Special Cardiac Research Fund). Grantee in military service. Refund $446.57.

Grant 645, 1942: Robert M. Virtue, University of Denver, $200, sulfur metabolism in cystinuric dogs. Grant returned because necessary animal quarters could not be obtained.

2. Work in Progress

Grant, 441, 1937: Edward S. West and G. E. Burget, University of Oregon Medical School, $350, diuretic action and chemical metabolism of sorbitol. Todd, W. R.; Myers, J., and West, E. S.: On the Metabolism of Sorbitol and Mannitol, *J. Biol. Chem.* **127:** 275, 1939.

Grant 479, 1937: Tracy J. Putnam, Boston City Hospital, $200, injuries to the cervical portion of the cord.

Grant 481, 1937: Warren, O. Nelson, Wayne University College of Medicine, $200, synthetic androgenic substances.

Grant 504, 1938: Wallace M. Yater, Georgetown University Medical School, $500, histopathology of "bundle branch" block.

Grant 518, 1938: Harold D. West, Meharry Medical College, $100, synthesis of *dl*-threonine. See grant 559, 1939.

Grant 522, 1938: Ludwig A. Emge, Stanford University School of Medicine, $500, relation of sex hormones to tumor growth.

Grant 533, 1939: Hardy A. Kemp and W. M. Fisher, Baylor University, $500, venom of southern and southwestern scorpions.

Grant 536, 1939: Catharine Macfarlane, Woman's Medical College of Pennsylvania, $1,900, value of periodic pelvic examination in detecting cancer of the uterus. See grants 494, 1938, and 623, 1942. Macfarlane, Catharine; Fetterman, Faith S., and Sturgis, Margaret C.: Report of an Experiment in the Control of Cancer of the Uterus, *Quart. Rev.*, New York City Cancer Committee, 1941. Macfarlane, Catharine: Progress Report on Experiment in Control of Cancer of the Uterus, *Connecticut State M. J.* **5:** 814, 1941. Macfarlane, Catharine: Precancerous Lesions of Uterine Cervix, *M. Woman's J.*, July 1941. Scott, Eleanor: Analysis of Lesions of the Cervix Discovered in Periodic Pelvic Examinations of 955 Women, *M. Woman's J.*, December 1941. Macfarlane, Catharine; Sturgis, Margaret C., and Fetterman, Faith S.: Report of an Experiment in the Control of Cancer of the Uterus, *Pennsylvania M. J.* **45:** 348, 1942.

Grant 541, 1939: Henry Laurens, Tulane University, $350, lowering of arterial pressure by carbon arc radiation. See grant 498, 1938. Laurens, Henry, and Graham, J. S.: The Influence of the Pressure Lowering Effect of Carbon Arc Radiation, *M. Rec.* **154:** 146, 1941.

Grant 557, 1939: W. D. Armstrong, University of Minnesota, $500, calcification of bone in vitro. Armstrong, W. D.; Sperling, Louis, and Litow, Sidney: Effect of Phosphoric Acid Esters on Fracture Healing, *Proc. Soc. Exper. Biol. & Med.* **49:** 169, 1942. Sperling, Louis; Armstrong, W. D., and Litow, Sidney: The Influence of Sodium-Beta-Glyceral-Phosphate on the Healing of Experimental Fractures, *J. Bone & Joint Surg.* **24:** 781, 1942.

Grant 559, 1939: Harold D. West, Meharry Medical College, $50, synthesis of *dl*-threonine. See grant 518, 1938.

Grant 567, 1940: Armand J. Quick, Marquette University, $275, conversion of prothrombin to thrombin. Quick, A. J.: Prothrombin Concentration of the Blood in Various Species, *Am. J. Physiol.* **132:** 239, 1941. Quick, A. J.: Effect of Air Currents on Plasma Prothrombin, *Proc. Soc. Exper. Biol. & Med.* **50:** 317, 1942.

Grant 570, 1940: William H. Sweet, University of Chicago, $300, course of nerve fiber tracts of the temporal lobe.

Grant 571, 1940: Joseph T. King, University of Minnesota, $280, antagonistic effect of tissues on the action of sulfanilamide. Jensen, N. K., and Nelson, M. C.: Local Sulfanilamide in Compound Fractures, *Surg., Gynec. & Obst.* **75:** 34, 1942.

Grant 574, 1940: A. G. Eaton, Louisiana State University, $300, absorption and metabolism of amino acids. Eaton, A. G., and Doty, J. R.: The Heat Production and Blood and Urine Constituents After Administration of l(−) Histidine to the Dog, *J. Nutrition* **21:** 25, 1941.

Grant 576, 1940: Edward S. West, University of Oregon Medical School, $250, solution of vesical calculi.

Grant 582, 1940: Charles W. Greene, Stanford University, $500, physiology of the coronary system in monkeys.

Grant 583, 1940: Ulrich Friedemann, Jewish Hospital of Brooklyn, $300, genesis of tetanus. Friedemann, Ulrich; Hollander, A., and Tarlov, I. M.: Investigations of the Pathogenesis of Tetanus: III, *J. Immunol.* **40:** 325, 1941. See grant 653, 1942.

Grant 584, 1940: Oscar V. Batson, University of Pennsylvania, $200, nystagmus.

Grant 591, 1940: Percival Bailey, University of Illinois, $500, effects of electrolytic lesions in the periaqueductal gray matter of the Macacus monkey. Bailey, Percival, and Davis, E. W.: Effects of Lesions of Periductal Gray Matter in the Cat, *Proc. Soc. Exper. Biol. & Med.* **51:** 305, 1942. The Syndrome of Obstinate Progression in the Cat, *ibid.*, p. 307.

Grant 594, 1940: I. L. Chaikoff, University of California, $350, phospholipid metabolism and blood regeneration as measured by radioactive phosphorus.

Grant 595, 1940: Arthur C. Allen, Mount Sinai Hospital, New York, $250, effect of chemicals on vegetations of experimental endocarditis. Refund $148.86.

Grant 599, 1941: William H. Welker, University of Illinois College of Medicine, $350, water soluble proteins.

Grant 603, 1941: Norris J. Heckel, Rush Medical College, Chicago, $250, effect of sex hormones on seminal fluid.

Grant 605, 1941: Harry G. Day, Indiana University, $400, physiologic significance of zinc.

Grant 607, 1941: Fritz Levy, Davis Memorial Hospital, Elkins, W. Va., $250, study of marrow cells.

Grant 608, 1941: Everett J. Evans, Medical College of Virginia, $500, problems in surgical shock.

Grant 609, 1941: C. E. Cahn-Bronner, University of Illinois College of Medicine, $300, bacterial metabolism.

Grant 611, 1941: M. R. Todd, University of Oregon Medical School, $200, the physiologic effects of canine distemper vaccine.

Grant 612, 1941: Roland K. Meyer, University of Wisconsin, $500, antihormones. Meyer, R. K.; Kupperman, H. S., and Finerty, J. C.: Increase in Gonadotropic Content of Pituitary Glands of Female Rats Treated with Antigonadotropic Serum, *Endocrinology* **30:** 662, 1942.

Grant 613, 1941: Robert W. Virtue, University of Denver, $200, formation of cholic acid. See grant 499, 1938, report for 1940.

Grant 616, 1941: Robert S. Dow, University of Oregon Medical School, $250, effects of clotting in cerebral veins.

Grant 617, 1941: Mary Juhn, University of Maryland College of Medicine, $500, tests of applicability of feather germ reaction to tumor diagnosis.

Grant 620, 1941: T. T. Chen, University of California, $150, illustrations of malarial parasites.

Grant 619, 1941: Paul Thomas Young, University of Illinois, $500, appetites and food preferences in the rat. See grant 641, 1942.

Grant 621, 1941: William M. Cahill, Wayne University College of Medicine, $175, self selection of food in relation to tumor growth.

Report of the Committee on Therapeutic Research

The Committee on Therapeutic Research, a standing committee of the Council on Pharmacy and Chemistry, encourages scientific investigations in the field of therapeutics by providing funds for the prosecution of necessary research.

During the year 1942 the committee issued twenty-seven new grants. A detailed list of these grants, together with a list of publications during 1942, and of unexpended grants made before Jan. 1, 1942, are included in this report.

The following is a list of the investigations conducted with the assistance of grants made by the Committee on Therapeutic Research, reports of which were published during 1942:

Chemotaxis, Morton McCutcheon: *Arch. Path.* **34:** 167 (July) 1942.

The Essential Characteristics of Local Anesthetics, R. Beutner, B. Calesnick and L. Lapinsohn: *Anesthesiology* **6:** 673 (Nov.) 1942.

The Vasomotor Components in the Vascular Reactions in the Finger to Cold, Alrick B. Hertzman and Laurence W. Roth: *Am. J. Physiol.* **136:** 669 (June) 1942.

The Reactions of the Digital Artery and Minute Pad Arteries to Local Cold, Alrick B. Hertzman and Laurence W. Roth: *Am. J. Physiol.* **136:** 680 (June) 1942.

The Absence of Vasoconstrictor Reflexes in the Forehead Circulation: Effects of Cold, Alrick B. Hertzman and Laurence W. Roth: *Am. J. Physiol.* **136:** 692 (June) 1942.

A Therapeutic Incompatibility Between Sulfapyridine and Quinine, Ben King Harned and Versa V. Cole: *J. Pharmacol. & Exper. Therap.* **74:** 42 (Jan.) 1942.

The Effects of a Diet Deficient in Vitamin B on the Toxicity of Sulfapyridine, Versa V. Cole and Ben King Harned: *Federation. Proc.* **1:** 147 (March) 1942.

Effect of Estrone on Lactogen Content in Pituitary and Blood of Male Rabbits, Joseph Meites and C. W. Turner: *Proc. Soc. Exper. Biol. & Med.* **49:** 190, 1942.

Lactogenic Content of Pituitaries of Pseudopregnant Rabbits, Joseph Meites and C. W. Turner: *Proc. Soc. Exper. Biol. & Med.* **49:** 193, 1942.

Prolactin, Abraham White, Roy W. Bonsnes and C. N. H. Long: *J. Biol. Chem.* **143:** 447 (April) 1942.

Statistical Studies on the Effects of Anesthetics in the Intravenous Cat Method of Standardizing Digitalis, Harald G. O. Holck, E. L. Smith, R. H. Shuler, R. Van Norman, D. R. Mathieson and J. Dahlstet: *Federation Proc.* **1:** 154 (March) 1942.

Effects of Testosterone Acetate and Propionate and of Estradiol Dipropionate on the Resistance of the Rat to Evipal Sodium, Nostal, Pernoston and Pentobarbital Sodium, Harald G. O. Holck, Donald R. Mathieson, Edwin L. Smith and Lewis D. Fink: *J. Am. Pharm. A.* (Scient. Ed.) **31:** 116 (April) 1942.

The Effect of Some Organic Solvents on the Hormones of the Posterior Lobe of the Hypophysis, John A. Vaichulis: *Federation Proc.* **1:** 170 (March) 1942.

Effects of Cocaine and Sympathomimetic Amines on Humoral Transmission of Sympathetic Nerve Actions, W. S. Lawrence, M. C. Morton and M. L. Tainter: *J. Pharmacol. & Exper. Therap.* **75:** 219 (July) 1942.

Tryptophan Metabolism, Raymond Borchers, Clarence P. Berg and Newton E. Whitman: *J. Biol. Chem.* **145:** 657 (Oct.) 1942.

The Arsenic Analogue of Choline as a Component of Lecithin in Rats Fed Arsenocholine Chloride, A. D. Welch and R. L. Landau: *J. Biol. Chem.* **144:** 581 (Aug.) 1942.

Effects of Asphyxia Anoxia and Myocardial Ischemia on the Coronary Blood Flow, Harold D. Green and René Wégria: *Am. J. Physiol.* **135:** 271 (Jan.) 1942.

Relative Increase in Chloride Excretion in the Dog After Graduated Doses of Mercurial Diuretics, Charles C. Roby and Carl Pfeiffer: *Am. J. Physiol.* **135:** 591 (Feb.) 1942.

Influence of Diet on Action of the Sulfonamide Drugs, Esther M. Greisheimer, Roberta Hafkesbring and Grace E. Wertenberger: *Proc. Soc. Exper. Biol. & Med.* **51:** 143, 1942.

Emetic Responses of Glycosides as Evidence of Their Cumulation and Synergistic Action in the Central Nervous System, Melvin Dreshach: *Federation Proc.* **1:** 22 (March) 1942.

Redistribution of Body Fluids After Glucose Injections in Rats with Adrenocortical Transplants, Leland C. Wyman and Caroline tum Suden: *Endocrinology* **31:** 295 (Sept.) 1942.

The Pharmacological Actions of Parenterally Administered Magnesium Salts: A Review, Paul K. Smith, Alexander W. Winkler and Hebbel E. Hoff: *Anesthesiology* **3:** 323 (May) 1942.

Absence of Beneficial Effects from Injections of Desoxycorticosterone Acetate and of Cortical Adrenal Extract in Experimental Anuria, Alexander W. Winkler, Paul K. Smith and Hebbel E. Hoff: *J. Clin. Investigation* **21:** 419 (July) 1942.

Intravenous Magnesium Sulfate in the Treatment of Nephritic Convulsions in Adults, Alexander W. Winkler, Paul K. Smith and Hebbel E. Hoff: *J. Clin. Investigation* **21:** 207 (March) 1942.

Heparin as an Antidote to Trypsin in the Rat, Carl A. Dragstedt, J. A. Wells and M. Rocha e Silva: *Federation Proc.* **1:** 149 (March) 1942.

Inhibitory Effect of Heparin on Histamine Release by Trypsin, Antigen and Proteose, Carl A. Dragstedt, J. A. Wells and M. Rocha e Silva: *Proc. Soc. Exper. Biol. & Med.* **51:** 191, 1942.

A Comparison of the Disposition of Injected Glucose in Two Strains of Rats, James M. Orten and George Sayers: *J. Biol. Chem.* **145:** 123 (Sept.) 1942.

The Direct Mammotrophic Action of Lactogenic Hormone, William R. Lyons: *Proc. Soc. Exper. Biol. & Med.* **51:** 308, 1942.

Further Ballistic Studies on Cardioaortic Hydraulic Models, Philip Dow and W. F. Hamilton: *Federation Proc.* **1:** 21 (March) 1942.

The Recoil Curves of the Circulation in Three Dimensions, W. F. Hamilton and Philip Dow: *Federation Proc.* **1:** 36 (March) 1942.

Blood Pressure Studies in Patients Undergoing Convulsive Therapy, Hervey Cleckley, W. P. Hamilton, R. A. Woodbury and P. P. Volpitto: *South. M. J.* **35:** 375 (April) 1942.

The Effects of Metrazol on the Blood Pressure of Man and Dog, W. F. Hamilton, R. A. Woodbury, Hervey Cleckley and P. P. Volpitto: *Hosp. Bull.* (U. of Ga.) **4:** 13, 1942.

Cure of Experimental Staphylococcic Meningitis, Ward J. MacNeal, Martha Jane Spence and Anne Blevins: *Proc. Soc. Exper. Biol. & Med.* **50:** 176, 1942.

Staphylococcemia 1931-1940: Five Hundred Patients, Ward J. MacNeal, Frances C. Frisbee and Margaret A. McRae: *Am. J. Clin. Path.* **12:** 281 (June) 1942.

Mechanism of Pentothal Sodium Antidiuresis, Herbert Silvette: *Arch. Int. Med.* **70:** 567 (Oct.) 1942.

Influence of Repeated Daily Exposure to Low Barometric Pressure on Urine Output. Herbert Silvette: *Proc. Soc. Exper. Biol. & Med.* **51:** 199, 1942.

Effect of Alcohol on Postpituitary Antidiuresis, Herbert Silvette: *Federation Proc.* **1:** 166 (March) 1942.

Effect of Epinephrine and Pitressin on the Coronary Artery Inflow in Anesthetized Dogs, Harold D. Green, René Wégria and Norman H. Boyer: J. Pharmacol. & Exper. Therap. **76:** 378 (Dec.) 1942.

Sulfonamides and the Blood *pH*, Grace E. Wertenberger: Proc. Soc. Exper. Biol. & Med. **51:** 145, 1942.

During 1942 the following grants were made:

Grant 466: Dr. R. H. Rigdon, associate professor of pathology, University of Tennessee, $100, to prepare a movie of a clinical case of malaria with the pathologic changes.

Grant 467: Dr. R. C. de Bodo, associate professor of pharmacology, New York University College of Medicine, $500, the antidiuretic action of the narcotics.

Grant 469: Dr. Harry Beckman, professor of pharmacology, Marquette University School of Medicine, $250, the possibilities of massive continuous therapy in malaria.

Grant 470: Dr. Herbert Silvette, assistant professor of pharmacology, University of Virginia Medical School, $275, the effect of low atmospheric pressures on the action of drugs.

Grant 471: Dr. W. F. Hamilton, professor of pharmacology and physiology, University of Georgia School of Medicine, $125, the cardiovascular pressures in unanesthetized animals and in man by means of the hypodermic manometer.

Grant 472: Dr. Robert V. Brown, associate professor of physiology and pharmacology, University of North Dakota, $150, action of pilocarpine on bile secretion.

Grant 473: Dr. Richard C. de Bodo, associate professor of pharmacology, New York University College of Medicine, $500, temporary and permanent effects of insulin on carbohydrate metabolism with special reference to its effects on epinephrine hyperglycemia and liver glycogenolysis.

Grant 474: Dr. Arthur C. DeGraff, professor of therapeutics, New York University College of Medicine, $400, effectiveness of sodium thiosulfate and sodium formaldehyde sulfoxalate in treatment of cardiac arrhythmias induced experimentally by mercurial diuretics.

Grant 475: Dr. Esther M. Greisheimer, professor of physiology, Woman's Medical College of Pennsylvania, $250, effects of sulfonamide drugs on certain phases of carbohydrate metabolism and blood *pH*.

Grant 476: Dr. Roberta Hafkesbring, associate professor of physiology, Woman's Medical College of Pennsylvania, $200, effects of various sulfonamide drugs on the electrocardiograms of dogs.

Grant 477: Dr. Harold C. Hodge, assistant professor of biochemistry and pharmacology, University of Rochester School of Medicine and Dentistry, $200, acute toxicity of choline.

Grant 478: Dr. Stacy R. Mettier, associate professor of medicine, University of California Medical School, $400, the rH factor in blood transfusion and other immunologic aspects of blood grouping.

Grant 479: Dr. Mayo H. Soley, assistant professor of medicine and pharmacology, University of California Medical School, $350, treatment of patients with toxic diffuse goiter by means of radioactive iodine.

Grant 480: Dr. J. Murray Luck, professor of biochemistry, Stanford University, $500, concentration of the B vitamins in liver of the soupfin shark.

Grant 481: Dr. W. J. MacNeal, director of the laboratories of bacteriology, New York Post-Graduate Medical School and Hospital, $250, bacteriophage phenomenon and therapeutic application of bacteriophages.

Grant 482: Dr. W. J. MacNeal, director of the laboratories of bacteriology, New York Post-Graduate Medical School and Hospital, $400, the therapy of experimental viridans endocarditis.

Grant 483: Dr. Donald Slaughter, professor of pharmacology and physiology, University of Vermont College of Medicine, $50, effects of sulfonamides on the regeneration of visual purple.

Grant 484: Drs. Alfred Goerner, associate professor of biological chemistry, Long Island College of Medicine, and M. Margaret Goerner, pathologist, Brooklyn Thoracic Hospital, $400, toxic action of carcinogenic compounds on liver tissues.

Grant 485: Dr. Carl W. Walter, laboratory of surgical research, Harvard Medical School, $250, for construction of a hydrogen ion potentiometer to be used for studies on (*a*) the mobilization and deposition of bone calcium by electrolysis; (*b*) animal tissue response to metallic magnesium and its alloys.

Grant 486: Dr. Lawrence W. Smith, professor of pathology, Temple University School of Medicine, $480, the effects of chlorophyll and other substances on tissue cultures and wound healing.

Grant 487: Dr. Harold Holck, associate professor of pharmacology, University of Nebraska College of Pharmacy, $175, the relation of sex to drug action.

Grant 488: Dr. L. R. Kaufman, director of surgery, New York Medical College, $125, circulatory competence of the gut in cases of intestinal obstruction.

Grant 489: Dr. L. R. Kaufman, director of surgery, New York Medical College, $100, use of enzyme mixture for dissolving slough.

Grant 490: Dr. Andrew F. Burton, assistant professor of pharmacology, Howard University School of Medicine, $698, the distribution of sulfanilamide and the toxic effects of quinine.

Grant 491: Dr. Fred D. Weidman, vice dean for dermatology and syphilology, University of Pennsylvania Graduate School of Medicine, $500, the control of dermatophytosis and value of living Bacillus subtilis cells.

Grant 492: Dr. Abraham White, assistant professor of physiologic chemistry, Yale University School of Medicine, $200, the hormones of the anterior pituitary gland.

The following grants were issued before Jan. 1, 1942. In some cases the grant has expired and an unexpended balance remains, or the work is not yet completed or not yet published.

Grant 164: E. L. Jackson, associate professor of pharmacology, Emory University School of Medicine, $200, to investigate the antagonism between sodium barbital and insulin.

Grant 232: George R. Cowgill, associate professor of physiologic chemistry, Yale University School of Medicine, $250, to investigate the heart in vitamin B deficiency.

Grant 238: Roy R. Kracke, professor of pathology, Emory University School of Medicine, $250, to investigate the effect of the oxidation products of aminopyrine and related drugs on the leukocyte counts of rabbits.

Grant 264: Detlev W. Bronk, Johnson professor of biophysics, University of Pennsylvania School of Medicine, $200, to investigate the action of various drugs on the autonomic centers.

Grant 280: John P. Peters, professor of medicine, Yale University School of Medicine, $200, to investigate by means of intravenous pyelography the state of the ureters and kidneys in a large series of patients after delivery and subsidence of acute signs of toxemia.

Grant 297: Melvin Dresbach, Harvard University School of Medicine, $250, to investigate the emetic effect of some of the digitalis bodies.

Grant 306: Edwards A. Park, professor of pediatrics, Johns Hopkins University School of Medicine, $75, to investigate rickets in the rat and the effect of solution of parathyroid on the circulation of the bone.

Grant 355: Peter K. Knoefel, associate professor of pharmacology, University of Louisville School of Medicine, $150, to investigate the action of amines, of the epinephrine series and of related substances on the central nervous system.

Grant 356: John B. Lagen, research associate in medicine, University of California Medical School, $150, to investigate the potassium and sodium ions in the blood of asthmatic patients and in anxiety states.

Grant 375: Joseph Seifter, Department of Pharmacology, Western Reserve University School of Medicine, $250, to investigate the pharmacology of metal alkyls.

Grant 391: A. R. McIntyre, professor of physiology and pharmacology, University of Nebraska College of Medicine, $100, to investigate ouabain and cardiac muscle and metabolism.

Grant 404: Carl Pfeiffer, Department of Pharmacology, Wayne University College of Medicine, $300, to investigate caffeine withdrawal headaches.

Grant 408: Ephraim Shorr, assistant professor of medicine, Cornell University Medical College, $300, to investigate the effect of progesterone on the vaginal smear.

Grant 411: Linn J. Boyd, professor of pharmacology, New York Medical College, $300, to investigate the effects of hypnotics on mercurial diuresis.

Grant 412: Anne Forbes, Massachusetts General Hospital, Boston, $400, to investigate the effect of various endocrine diseases and the administration of various endocrine products on the 17-ketosteroid secretion in the urine.

Grant 413: Claude E. Forkner, New York Hospital, Department of Medicine, $300, to investigate bronchiectasis, etiology and treatment.

Grant 417: H. E. Hoff, assistant professor of physiology; A. W. Winkler, instructor in medicine, and P. K. Smith, research assistant in pharmacology and toxicology, Yale University School of Medicine, $250, to investigate the action of ions.

Grant 419: Thomas H. McGavack, New York Medical College, $300, to investigate the action of lipocaic and pancreatic extracts.

Grant 423: Treat B. Johnson, professor of organic chemistry, Yale University School of Medicine, $250, to investigate pyrimidines.

Grant 430: J. P. Simonds, Department of Pathology, Northwestern University Medical School, $100, to investigate the selective action of different types of poisons on the kidneys.

Grant 437: M. L. Tainter, professor of pharmacology, Stanford University School of Medicine, $250, to investigate sympathomimetic amines.

Grant 438: George L. Maison, assistant professor of physiology, Wayne University College of Medicine, $200, to investigate the effect of certain drugs on the strength of skeletal muscle.

Grant 442: Morton McCutcheon, associate professor of pathology, University of Pennsylvania School of Medicine, $150, to investigate cellular locomotion.

Grant 443: A. B. Baker, assistant professor of neuropsychiatry and neuropathology, and Raymond N. Bieter, professor of pharmacology, University of Minnesota Medical School, $500, to investigate toxic effects of sulfanilamide and derivatives on nervous system and effect of vitamin B complex in prevention of such injuries.

Grant 445: Paul L. Lay, professor of physiological chemistry, and John R. Trotter, instructor in physiological chemistry, University of Arkansas School of Medicine, $300, to investigate ocular manifestations of tryptophan deficiency.

Grant 446: Carl A. Dragstedt, professor of pharmacology, Northwestern University Medical School, $100, to investigate the effect of heparin on anaphylactic and related phenomena.

Grant 449: Alrick B. Hertzman, professor of physiology, St. Louis University School of Medicine, $500, to investigate peripheral circulation.

Grant 450: Linn J. Boyd, professor of pharmacology, and David Scherf, associate clinical professor of medicine, New York Medical College, $50, to investigate the effect of strophanthin in paroxysmal tachycardia.

Grant 453: Amrdeo S. Marrazzi, assistant professor of pharmacology, New York University College of Medicine, $500, to investigate sympathomimetic amines.

Grant 454: W. L. Mendenhall, professor of pharmacology, and Albert J. Plummer, assistant professor of pharmacology, Boston University School of Medicine, $50, to investigate the quantitative determination of theophylline.

Grant 455: Frederick H. Pratt, professor of physiology, and Marion A. Reid, instructor in physiology, Boston University School of Medicine, $100, to investigate the effect of cardiac drugs on the denervated lymphatic hearts.

Grant 456: H. Morrow Sweeney, professor of physiology and pharmacology, University of South Dakota, $100, to investigate the effects and mode of action of certain drugs with analeptic properties, namely amphetamine and metrazol, after morphine and sodium pentobarbital respectively.

Grant 457: Leland C. Wyman, associate professor of physiology, Boston University School of Medicine, $372.50, to investigate the factors controlling the growth and functional efficiency of transplanted adrenal cortical tissue.

Grant 458: George Fahr, professor of internal medicine, University of Minnesota, $100, to investigate the effects of lanatoside C on certain types of heart disease.

Grant 459: Mary E. O'Sullivan, Bellevue Hospital, $100, to investigate the therapeutic effect of estradiol in muscular dystrophy.

Grant 462: B. K. Harned, professor of pharmacology; Versa V. Cole, associate professor of pharmacology, and Hughbert C. Hamilton, associate professor of physiology, Women's Medical College of Pennsylvania, $288, to investigate the effects of bromide administered to pregnant rats on the learning ability of the offspring.

Grant 464: A. J. Nedzel, associate professor of pathology, University of Illinois College of Medicine, $300, to investigate the response of the animal body to drugs under different environmental conditions.

Grant 465: L. N. Katz, director of cardiovascular research, Michael Reese Hospital, $200, to investigate the action of various steroids on capillary permeability.

TREASURER'S REPORT

Report of the Treasurer of the American Medical Association for the Year Ended December 31, 1942

Investments (At Cost) as at January 1, 1942		$2,421,942.99
Bonds Purchased (At Cost)	239,904.49	
	$2,661,847.48	
Less: Bonds Called, Matured or Sold	120,538.32	
Investments as at December 31, 1942		$2,541,309.16
Balance for Investment January 1, 1942	$ 286,718.14	
Interest Received on Investments—Year 1942	75,585.92	
	362,304.06	
Less: Bonds Purchased (At Cost Plus Accrued Interest $1,103.34)	241,007.83	
Uninvested Funds December 31, 1942		121,296.23
Invested and Uninvested Funds as at December 31, 1942		$2,662,605.39

DAVIS MEMORIAL FUND

Balance in Fund January 1, 1942	$7,519.76
Interest Earned on Bank Balance—Year 1942	94.27
Funds on Deposit as at December 31, 1942	$7,614.03

HERMAN L. KRETSCHMER, Treasurer.

AUDITOR'S REPORT

January 29, 1943.

To the Board of Trustees,
American Medical Association, Chicago, Illinois.

Dear Sirs:

We have examined the Balance Sheet of the American Medical Association, Chicago, Illinois, as of December 31, 1942, and the statement of income for the year ended on that date, have reviewed the system of internal control and the accounting procedures of the Association and, without making a detailed audit of the transactions, have examined or tested accounting records and other supporting evidence, by methods and to the extent we deemed appropriate except as hereinafter stated regarding confirmation of receivables and observation of the inventory taking.

The cash and bank balances have been confirmed by count or by certificates from the depositaries. The United States government and other marketable securities were confirmed by an acknowledgment from the Continental Illinois National Bank and Trust Company of Chicago, where the securities are held for safekeeping.

We did not independently confirm the accounts receivable by communication with the debtors. The accounts receivable were reviewed as to age and collectibility and, in our opinion, the balances are fully realizable. We reviewed the plan and system of control adopted for inventory taking but we did not observe the taking of the inventories nor did we make tests of the physical existence of the quantities recorded.

Expenditures charged to property and equipment accounts during the year, in our opinion, were properly capitalized as representing additions or improvements. The provision for depreciation for the year appears to be adequate.

In our opinion, subject to the exceptions set forth in paragraph three, the accompanying Balance Sheet and related statement of Income present fairly the position of the American Medical Association at December 31, 1942, and the results of the operations for the year, based on the accounting procedures employed by the Association regarding which the following observations are submitted:

(a) In accordance with the established practice of the Association, the accounts as stated do not include (a) unrecorded assets in respect of accrued interest on bond investments, and membership dues unpaid; and (b) provision for accrued property taxes for the year 1942, and sundry unpaid bills and wages.

(b) Subscriptions paid in advance are stated at an estimated amount which is based on cash received in December 1942, on account of 1943 subscriptions. This procedure conforms to the method used in prior years.

(c) Advance payments on publications include an estimated amount ($131,027.29) for prepaid subscriptions to HYGEIA, and the amount ($15,075.81) received in advance for January 1943 advertising, directory information sales and service.

We have received a letter from Messrs. Loesch, Scofield, Loesch and Burke, attorneys for the Association, regarding litigation pending against the Association or its officers at December 31, 1942, which states that the following law suits had been filed:

Jean Paul Fernel—$1,000,000 (libel)
William E. Balsinger—$100,000 (libel)
Muriel Longini—$1,000 (claim)
Wayne County Association of Physicians and Surgeons of Osteopathic Medicine, Inc.—$100,000 (slander)

The attorneys state that in their opinion all of these suits will be defeated. The letter states also that the Supreme Court has affirmed the judgment of conviction against the Association in the case filed by the United States charging conspiracy in restraint of trade; the judgment was that the Association be sentenced to pay a fine of $2,500.

Fidelity insurance is carried against the undermentioned officers and employees, in the amount stated:

Dr. Olin West, Secretary and General Manager	$10,000.00
Dr. Herman L. Kretschmer, Treasurer	10,000.00
E. A. Hoffman, Cashier	10,000.00
J. E. Hartigan, Assistant Cashier	2,000.00
Sundry Employees (thirteen, $1,000 each)	13,000.00
Total Fidelity Insurance	$45,000.00

We have pleasure in reporting that the books are well maintained and that every facility was afforded us for the proper conduct of the examination.

Yours truly,
PEAT, MARWICK, MITCHELL & CO.

INDEX TO STATEMENTS

	Exhibit
Balance Sheet as of December 31, 1942	"A"
Income Account for the year ended December 31, 1942	"B"

	Schedule
Journal Operating Expenses for the year ended December 31, 1942	"1"
Association and Miscellaneous Expenses for the year ended December 31, 1942	"2"

EXHIBIT "A"
BALANCE SHEET
AS OF DECEMBER 31, 1942

ASSETS:		
Property and Equipment—at cost:		
Land		$ 328,773.98
Buildings	$1,375,349.31	
Machinery and printing equipment	502,803.53	
Office and laboratory equipment	196,654.35	
	2,074,807.19	
Less—Reserve for depreciation	959,006.61	1,115,800.58
Type metal (book inventory)—at average cost		23,356.18
Total Property and Equipment		1,467,930.74
Marketable Securities—at cost (valuation based on market quotations $2,590,837.19):		
United States Government securities	1,823,816.81	
Railroad, municipal, industrial and public utility bonds	717,492.35	2,541,309.16
Representing investments of:		
General fund	666,309.16	
Association reserve fund	350,000.00	
Retirement reserve fund	125,000.00	
Building reserve fund	450,000.00	
Depreciation reserve fund	950,000.00	
Cash held by Treasurer for Investment		121,296.23
Cash in Bank and on Hand		555,245.55
Accounts Receivable:		
Advertising	92,538.72	
Reprints	3,085.38	
Directory, 17th Edition—estimated realizable balance	35,450.85	
Directory Report Service, 18th Edition	1,062.11	
Miscellaneous accounts receivable	2,305.97	134,443.03
Inventories of Materials, Supplies, Work in Progress and Publications		154,139.72
Expenditures on Publications in Progress		39,244.22
Prepaid Expenses, Deposits and Advances:		
Insurance, etc.	9,661.53	
Deposits and advances	6,907.84	16,569.37
Total		$5,030,178.02
LIABILITIES:		
Accounts Payable:		
Co-operative Medical Advertising Bureau		$ 15,027.02
Miscellaneous		13,601.46
Total Accounts Payable		28,628.48
Subscriptions Paid in Advance		144,231.12
Advance Payments on Publications		146,103.10
Net Worth:		
Association reserve	$ 350,000.00	
Building reserve	450,000.00	
Retirement reserve	125,000.00	
Capital account:		
Balance December 31, 1941	$3,480,799.98	
Add—Net income for the year ended December 31, 1942	330,415.34	
	3,811,215.32	
Deduct—Amount transferred during year to Retirement Reserve Fund	25,000.00	3,786,215.32
Net Worth December 31, 1942		$4,711,215.32
Total		$5,030,178.02

EXHIBIT "B"
INCOME ACCOUNT
FOR THE YEAR ENDED DECEMBER 31, 1942

Journal:	
Gross Earnings:	
Fellowship dues and subscriptions	$ 804,319.66
Advertising	1,036,571.59
Jobbing	8,358.58
Reprints (Loss)	1,876.96
Books	15,026.82
Insignia	5,330.90
Miscellaneous Sales	12,405.21
Gross Earnings from Journal	1,880,135.80
Operating expenses—Schedule "1"	1,108,492.08
Net Earnings from Journal	771,643.72

Association Income:		
Income from investments	$ 74,482.58	
Miscellaneous income	20,653.84	
	$ 95,136.42	
Less—Net loss on investments sold or called	35.92	95,100.50
Gross Income		866,744.22
Association Expense—Schedule "2"	467,974.57	
Miscellaneous Expenses—Schedule "2"	68,354.31	536,328.88
Net Income		$ 330,415.34

SCHEDULE "1"

JOURNAL OPERATING EXPENSES

FOR THE YEAR ENDED DECEMBER 31, 1942

Wages and salaries		$ 548,302.57
Editorials, news and reporting		8,607.84
Paper—Journal stock		259,037.98
Paper—miscellaneous		3,644.16
Electrotype and engravings		7,567.27
Binding		419.90
Ink		8,672.97
Postage—first class		29,480.36
Postage—second class		66,266.17
Journal commissions		21,818.37
Collection commissions		155.91
Discounts		37,672.78
Express and cartage		6,614.32
Exchange		1,874.79
Office supplies		9,078.36
Telephone and telegraph		4,088.54
Office printing		13,101.63
Power and light		15,067.33
Factory supplies		19,629.94
Repairs and renewals—machinery		2,862.33
Insurance and taxes		26,049.05
Group hospital insurance		2,771.26
Building expenses		51,336.57
Fuel		9,299.76
Miscellaneous operating expenses		21,178.00
Loss on metal dross sales		989.51
Loss on sales of equipment and bad debt recoveries (net credit)		470.34
		1,175,117.33
Depreciation (based on estimated remaining life):		
Buildings	$23,262.90	
Machinery	14,650.15	
Type and factory equipment	1,352.63	
Furniture and equipment	7,085.99	46,351.67
Total		1,221,469.00
Deduct—Proportion of overhead expenses charged to other publications and departments		112,976.92
Total Journal Operating Expenses		$1,108,492.08

SCHEDULE "2"

ASSOCIATION AND MISCELLANEOUS EXPENSES

FOR THE YEAR ENDED DECEMBER 31, 1942

Association Expenses:	
Association	$111,107.77
Health Education	38,346.98
Pharmacy and Chemistry	54,569.35
Chemical Laboratory	18,180.03
Medical Education and Hospitals	70,444.01
Therapeutic Research	7,630.54
Legal Medicine and Legislation	31,843.18
Bureau of Investigation	16,503.73
Bureau of Medical Economics	27,155.07
Council on Foods and Nutrition	19,526.78
Physical Therapy	17,104.84
Council on Industrial Health	21,863.31
Bureau of Exhibits	13,305.27
Association Exhibits	5,229.26
Committee on Medical Preparedness	14,497.99
Laboratory Depreciation (based on estimated remaining life)	666.46
Total Association Expenses	$467,974.57
Miscellaneous Expenses:	
Legal and investigation	$ 64,449.71
Sundry publications (net)	3,904.60
Total Miscellaneous Expenses	$ 68,354.31

REPORT OF THE JUDICIAL COUNCIL

To the Members of the House of Delegates of the American Medical Association:

The report of the Judicial Council will be submitted separately.

REPORT OF THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

To the Members of the House of Delegates of the American Medical Association:

The Council on Medical Education and Hospitals during the past year has been confronted with many perplexing problems in medical education.

MEDICAL EDUCATION AND THE WAR EFFORT

As a preparedness measure the medical schools had early increased the size of their entering classes by approximately 10 per cent.

On the entry of this country into the war the importance of providing as soon as possible an adequate supply of physicians for both the military and the civilian population was apparent. Thus the first step in this direction was the adoption by the medical schools of the country, with but three exceptions, of an accelerated program providing for the completion of the usual four year medical course in three calendar years. It has been estimated that this program provides for the graduation of 4,455 students by March 31, 1943. By the end of the present year approximately 5,380 additional students will complete their medical college courses. The majority of medical students are at present in the Army or Navy Reserve Corps or in the advanced R. O. T. C. and will be eligible for commissions on graduation. However, all will be allowed one year from the date of their graduation to complete a year's internship in a hospital before being called to active duty.

In November 1942 the Council on Medical Education and Hospitals recommended that for the duration of the war the required premedical education, including satisfactory courses in physics, biology and chemistry including organic chemistry, be included within two calendar years of instruction. Such a program is being adopted by practically all the medical schools of the country.

Although medical schools have been advised not to lower the standards of medical education in connection with their contribution to the war effort, it has been necessary for them to release for military duty many of their prominent faculty members while others are devoting their time to war research. Thus with greatly depleted staffs the medical schools are facing the difficult task of both increasing and speeding up the production of competent physicians.

The lowering of the draft age to 18 years and the program of the Army and Navy to place selected premedical and medical students on active duty to continue their medical education have introduced new problems. One of the greatest of these is that involving the present large pool of students who are at various levels of their premedical programs. Only a relatively small number of this group can be accommodated in the 1943 and 1944 entering classes of the medical schools of the country. In general, the 1943 entering classes have already been filled and the medical schools are now proceeding with the selection of students for their 1944 entering classes.

At present it would appear that the entire collegiate program of the Army is somewhat as follows:

Young men 18 years of age who are physically qualified will be inducted into the Army as privates and will be sent to camp for a preliminary period of training. During the period they are at camp they will be permitted to make application for assignment to a Specialized Collegiate Training Program. Students will probably be chosen for such programs on the basis of certain tests and decisions made by boards to be appointed for this purpose. All students assigned to such specialized collegiate training programs will be assigned to colleges with which the Army has contracts.

The Council on Medical Education and Hospitals in February 1943 approved the basic pattern of the proposed premedical curriculum of the Army Specialized Training Program.

The premedical curriculum of the Navy, which will be offered in colleges with which the Navy has contracts, as at present arranged differs in certain respects from that of the Army and calls for a longer period of premedical study.

It is understood that the medical schools will participate in the selection of students for admission to the various medical schools.

The medical school curriculums under the Army and Navy training programs will remain entirely under the supervision of the individual schools, and it is understood that all approved medical schools may receive both Army and Navy men as students.

During their premedical and medical courses these students will be on active duty, subject to military regulations, and will be entirely supported by the federal government.

It is understood that premedical and medical students who now hold commissions in the Medical Administrative Corps of the Army may, if they desire, remain in their present status and proceed with their program of medical education at their own expense. It is understood that the Navy offers similar opportunities to students holding commissions Ensign H-V (P).

Officials of the government and officers of the armed forces presented before the Annual Congress on Medical Education and Licensure in February 1943 various aspects of medical education and the war.

The Army and Navy programs do not make provision for the training of physicians for civilian practice. However, it is understood that these programs will not involve the complete facilities of all the medical schools of the country and that a certain number of women and physically disqualified men may undertake the study of medicine as civilians and on their own financial resources.

SHORTAGE OF INTERNS AND RESIDENT PHYSICIANS

The Council is acutely aware of the difficulties the hospitals of the country are encountering in connection with the shortage of interns, the curtailment in the use of second year interns and the inability to obtain residents. The shortage of interns is not entirely due to the exigencies of war. The number of available internships has exceeded the annual output of medical graduates for a number of years, but some of the resultant vacancies have been filled by second year interns. The present requirement that an internship for physically qualified graduates shall not exceed twelve months has resulted in an additional increase in the number of unfilled internships. It has been suggested that all hospitals cooperate in an effort to maintain an equitable distribution of interns by limiting their appointments to actual minimum needs. The assignment of many routine procedures to nursing and technical personnel will conserve the intern's time for essential hospital and educational needs.

The Council has recently approved the acceptance of graduates of Latin American schools as interns and residents, the responsibility for the evaluation of the credentials of each applicant to rest with the hospital involved. Similarly, graduates of European medical schools may be appointed if their qualifications are found by the hospital to be satisfactory.

Graduates of medical schools in the United States who are not eligible for military service are not officially restricted as to the length of internship. Yet they are urged to complete their training as early as possible so as to be available for essential civilian needs.

In regard to residents, the Procurement and Assignment Service in February 1943 stated, "Interns who have already had a year of hospital service must be considered as residents for the duration of the war. Although the Army and Navy appreciate the importance of graduate training in the various specialties of medical practice, they do not feel that they can at the present time defer calling interns to active duty in order that they may continue specialization in civilian hospitals. Therefore the only justification for the continuation of residencies and fellowships during the war is that they are essential for the provision of adequate medical care for the hospital patients or for the clinical training of medical students." In 1942 the Procurement and Assignment Service stated that in general the essential number of residencies should be less than 50 per cent of the number that hospitals had before the war and for 1943 this number must be reduced still more.

When residency vacancies exist it has been recommended that they be filled from the following groups in order: (1) women physicians, (2) physicians ineligible for military service, (3) qualified graduates of foreign medical schools.

The Procurement and Assignment Service suggests that no request for deferment of interns who hold commissions in the Army or Navy should be made until the possibilities of filling minimum essential residencies from the aforementioned groups have been exhausted. However, it is essential that a sufficiently adequate and competent group of residents be made available for the clinical teaching services of the medical schools.

During the past year the Council, at the request of the Procurement and Assignment Service, made a survey of the hospitals of the country in an effort to secure the names, military status and addresses of all interns and residents who completed their hospital service in 1942.

The Council has appointed a committee to confer with representatives of the American Hospital Association and the Association of American Medical Colleges in regard to the many perplexing problems relating to hospital internships and residencies.

POSTWAR GRADUATE EDUCATION

To help the expected demand for graduate training by large numbers of physicians on the cessation of hostilities, the Council is planning to make a survey of all potential and available facilities for graduate training in connection with hospitals, undergraduate and graduate medical schools, clinics, departments of health and other agencies interested in graduate or postgraduate education.

INTER-AMERICAN RELATIONS

The Council has endeavored to cooperate in the field of inter-American relationships in graduate medical education. A copy of the Educational Number of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION in which are listed all the approved internships and residencies in the United States was sent to each of the South American schools in November 1942. The Council will offer no objection to any hospital in the United States accepting a graduate of a South American school as an intern or resident provided the responsibility for evaluating the previous training of the applicant is assumed by the hospital. An attempt is being made to get more definite information with regard to the standards of medical education in the South American schools. The Council has never been in a position to inspect any medical school outside the continental limits of the United States and has therefore not considered it justifiable to attempt to evaluate them in any way. It may be that there may develop opportunities for the Council to be of service to the South American schools beyond that indicated.

COOPERATION WITH OTHER AGENCIES

In February 1942 the Executive Council of the Association of American Medical Colleges, meeting with the Council on Medical Education and Hospitals and the Board of Trustees of the American Medical Association, approved the establishment of a liaison committee to consider matters of mutual interest. This committee was given official status by the Association of American Medical Colleges at its meeting Oct. 26-28, 1942. The first official meeting of this liaison committee was held on Feb. 13, 1943 and various matters of mutual interest were discussed and recommendations made. It is believed that the functioning of this committee will prove to be of distinct advantage to medical education.

A joint meeting of the Council on Medical Education and Hospitals and the Advisory Board for Medical Specialties was held on Feb. 14, 1943. The topics discussed included specialty credit for army service and postwar graduate training for large numbers of physicians.

MEDICAL SCHOOLS

As of March 1, 1943 sixty-six four year medical schools are named on the approved list of medical schools maintained by the Council on Medical Education and Hospitals. Two of these institutions are in a probationary status. Approval of one school was restored during the year. Rush Medical College, which offered clinical courses only, discontinued undergraduate teaching in June 1942.

Ten schools of the basic medical sciences are included on the approved list, two of them on probation. One of the schools of basic medical sciences has practically completed its development into a complete medical school and two others are initiating similar developments. One of these, the University of Utah School of Medicine, is offering junior work beginning in March 1943. Still another school of the basic medical sciences is planning to establish a four year program in affiliation with medical schools outside the state.

The secretary, accompanied by a representative of the Association of American Medical Colleges, visited eight medical schools during 1942.

HOSPITALS AND TECHNICAL SCHOOLS

A summary of the Council's activities relating to hospitals and technical schools for the year ended Feb. 28, 1943, including hospital registration, hospitals approved for intern training, for residencies and fellowships in the specialties, as well as the status of technical schools, follows:

Hospital Register

Hospitals registered, March 1, 1942	6,358
Registered during the year	155
Closed or transferred to unclassified file	168
Hospitals registered, March 1, 1943	6,345

Approved Internships

Hospitals approved, March 1, 1942	732
Approved during year	27
Removed from approved list	16
Hospitals approved, March 1, 1943	743

Approved Residencies and Fellowships

Hospitals approved, March 1, 1942	632
Approved during year (residencies)	43
Removed from approved list (residencies)	9
Hospitals approved, March 1, 1943	666

TECHNICAL SCHOOLS

Approved Schools for Clinical Laboratory Technicians

Approved schools, March 1, 1942	174
Approved during year	56
Removed from approved list	3
Approved schools, March 1, 1943	227

Approved Schools for Physical Therapy Technicians

Approved schools, March 1, 1942	16
Approved during year	7
Removed from approved list	1
Approved schools, March 1, 1943	22

Approved Schools of Occupational Therapy

Approved schools, March 1, 1942	6
Approved during year	1
Removed from approved list	0
Approved schools, March 1, 1943	7

INSPECTIONS OF HOSPITALS, TECHNICAL SCHOOLS AND SPAS, 1942

Hospitals

Intern training	107
Residency and fellowships	95
Intern training and residencies	82
Registration	24
Total	308
Individual residencies and fellowships investigated	393

Technical Schools

Clinical laboratory schools	80
Physical therapy schools	13
Occupational therapy schools	1
Total	94
Medical record librarian schools	9
Spas and health resorts	5
Total number of days in the field	419

CENSUS OF HOSPITALS

The Twenty-Second Annual Census of Hospitals covered the year 1942 and was reported in the Hospital Number of THE JOURNAL, March 27, 1943. Some significant points brought out in this survey are mentioned in the following paragraphs:

Registered hospitals number 6,345, 13 fewer than in 1941. The capacity of these hospitals was 1,383,827 beds, or 59,446 more than in 1941. The total number of patients admitted, not counting newborn infants, was 12,545,610, equal to nearly 10 per cent of the entire population of the United States. Information was obtained from more than 99 per cent of the hospitals, including 1,038 hospitals approved for internships and/or residencies in specialties. This group of approved hospitals offers 7,959 internships and 6,383 residencies, assistant residencies and fellowships. At the time of reporting in January 1943 they had a total of 5,567 interns and 4,452 residents on duty.

In this census the first complete survey of blood banks and plasma banks in hospitals was made, and 610 hospitals reported that they had blood banks, 1,741 plasma banks and 546 both blood and plasma banks, while 2,457 have such facilities readily available.

Births in hospitals in 1942 totaled 1,670,599. This evidently is well above one half of all births in the entire country. The proportion of births occurring in hospitals varies from 15.8 per cent in Mississippi to 92.2 per cent in New Jersey.

Statistics, by states, were also published to show the percentage of the population hospitalized, the number of operations, the percentage of patients operated on, the number of deaths and the number and percentage of necropsies.

Data were also included regarding administrative, nursing and technical personnel in hospitals. In the nursing schools 98,166 students were enrolled as compared with 93,977 in 1941.

The Hospital Number supplied detailed information with regard to technical schools approved by the Council. Those include 227 schools for the training of laboratory technicians, 22 schools for physical therapy technicians and 7 schools of occupational therapy. Studies of initial training courses for medical record librarians were also reported.

CONTINUATION COURSES

Opportunities for continuation courses for practicing physicians offered in quarterly periods were published in THE JOURNAL of July 25, Oct. 17 and Dec. 26, 1942 and March 20, 1943.

ESSENTIALS OF AN ACCEPTABLE SCHOOL FOR CLINICAL LABORATORY TECHNICIANS

The Council recommends that the Essentials of an Acceptable School for Clinical Laboratory Technicians, Section III Faculty, paragraph 2, first sentence, be modified to read: "In laboratory practice the enrolment should not exceed two students to each member of the teaching staff." The Council desires ratification by the House of Delegates.

ESSENTIALS OF AN ACCEPTABLE SCHOOL FOR PHYSICAL THERAPY TECHNICIANS

A subcommittee of the Council is now drafting a revision of the Essentials of an Acceptable School for Physical Therapy Technicians, which will be presented to the House of Delegates at its forthcoming session for ratification.

COOPERATION WITH COMMITTEE ON AMERICAN HEALTH RESORTS

At the meeting of the Council on Feb. 15, 1942 the Committee on American Health Resorts submitted a request that the Council on Medical Education and Hospitals aid in the study of health resorts by having its staff of inspectors visit spas seeking recognition by the committee. After a preliminary survey of two institutions to determine the feasibility of such a program, the Council has proceeded with the inspection of health resorts. Five institutions have thus far been visited and others will be visited as far as the present personnel of the Council will permit.

SCHOOLS FOR TRAINING OF MEDICAL RECORD LIBRARIANS

In June 1942 a resolution was introduced to the House of Delegates requesting that the American Medical Association inspect and approve or disapprove present and future schools for the training of medical record librarians. This matter

was referred to the Board of Trustees, which subsequently voted that the Council on Medical Education and Hospitals be asked to supervise the inspection of such schools. In accordance with this request the Council has completed a survey of ten medical record librarian schools. A subcommittee of the Council is preparing minimum Essentials of an Acceptable School for Medical Record Librarians, which the Council hopes to present to the House of Delegates for ratification at its next meeting.

COUNCIL PUBLICATIONS

Major publications during 1942 and thus far in the present year include:

Hospital Service in the United States.
State Board Number of THE JOURNAL.
Medical Education in the United States and Canada.
Compilation of Papers Read at the Annual Congress on Medical Education and Licensure.
Choice of a Medical School.
Approved Colleges of Arts and Sciences.
Schools for Clinical Laboratory Technicians.
Schools for Physical Therapy Technicians.
Schools of Occupational Therapy.

SECRETARY OF THE COUNCIL

The Council is pleased to announce the appointment of Dr. Victor E. Johnson, Dean of Students at the University of Chicago School of Medicine, as Secretary of the Council on Medical Education and Hospitals. Dr. Johnson will assume the responsibilities of the secretariate beginning July 1, 1943.

IN APPRECIATION

The Council has met with government and military officials a number of times during the year and wishes to express its appreciation for their recognition of the importance of maintaining adequate educational standards in these difficult times and also for their readiness in supplying data for the Educational Number of THE JOURNAL and for their personal presentations at the Annual Congress on Medical Education and Licensure.

The Council is also deeply grateful to the executive officers of medical schools, hospitals and licensing boards and technical schools for their cordial cooperation in supplying the various data needed for the annual compilation of statistics and for the maintenance of its records.

Finally, the Council desires to express its appreciation to the officers and trustees of the American Medical Association for their whole hearted cooperation and assistance in the conduct of the various activities of the past year.

Respectfully submitted.

RAY LYMAN WILBUR, Chairman.
RUSSELL L. HADEN.
CHARLES GORDON HEYD.
J. H. MUSSER.
HARVEY B. STONE.
REGINALD FITZ.
H. G. WEISKOTTEN, Secretary.

REPORT OF THE COUNCIL ON SCIENTIFIC ASSEMBLY

To the Members of the House of Delegates of the American Medical Association:

CANCELLATION OF 1943 ANNUAL SESSION

Conditions incident to the prosecution of the war effort of the nation made it necessary to cancel the annual session of the Association, which was scheduled to be held in San Francisco in 1943. For that reason, no meetings of the Scientific Assembly will be held during the current year.

The usual meetings of the Council on Scientific Assembly were held during the last annual session in Atlantic City, and the regular annual meeting was held in Chicago on Dec. 4, 1942. At the same time the annual Conference of Section Secretaries with the Council was held, and plans were made whereby the officers of the sections would cooperate with the Editorial Department in maintaining the quality and quantity of scientific material for publication in THE JOURNAL. The large number of scientific papers presented at each annual session of the Scientific Assembly and thereby made available for publication in THE JOURNAL will not be available for publication in 1943 or in the first part of the succeeding year. The secretaries and other officers of the scientific sections have generously and enthusiastically offered their active cooperation in a plan designed to procure suitable material of timely interest.

CONTINUANCE OF SERVICE OF SECTION OFFICERS

As there will be no meetings of the scientific sections in 1943, the elected officers of these sections will continue to serve in their present capacities until their successors are elected and installed, in accordance with the provisions of the Constitution and By-Laws.

SESSION FOR GENERAL PRACTITIONERS

In accordance with the action of the House of Delegates at the annual session in 1941, two sessions for general practitioners were held in the Section on Miscellaneous Topics at the Atlantic City session. These sessions were well attended and the programs presented were well received. It is the purpose of the Council on Scientific Assembly to arrange for similar sessions for general practitioners to be held in the Section on Miscellaneous Topics at the next annual session of the Association.

WARTIME GRADUATE MEDICAL MEETINGS

In compliance with recommendations offered by the Council on Scientific Assembly to the Board of Trustees, provision has been made for wartime graduate medical meetings to be held at concentration centers where large numbers of medical personnel are on active duty with the military forces. These courses are to be offered through a joint committee representing the American Medical Association, the American College of Physicians and the American College of Surgeons. The Surgeon Generals of the U. S. Army, U. S. Navy and U. S. Public Health Service have cordially endorsed this undertaking and have graciously offered active cooperation toward its success.

The joint committee is composed of Dr. Edward L. Bortz of Philadelphia, Chairman, a member of the Council on Scientific Assembly, Dr. William B. Breed of Boston and Dr. Alfred Blalock of Baltimore. The committee has organized a Board of National Consultants composed of prominent physicians who will cooperate in the preparation of teaching schedules and who will also cooperate with regional committees in working out local programs and in securing contributors. The programs will be submitted to the Surgeon Generals of the Army, Navy and Public Health Service and the commanding officers of the various army corps commands and naval districts. Section committees, representing twenty-four sections of the country, will be responsible for arranging for the presentation of the teaching programs, will aid in the selection of teachers within their respective territories and will be requested to attend to other important details.

Physicians residing in communities near military concentration centers will be quite at liberty to attend these Wartime Graduate Medical Meetings.

IN APPRECIATION

The Council on Scientific Assembly desires to express its appreciation of the splendid service rendered by the officers of the scientific sections and to extend its thanks to Fellows of the Association and invited guests who contributed to the scientific programs that were offered at the last annual session of the Association.

Respectfully submitted.

A. A. WALKER, Chairman.
EDWARD L. BORTZ.
J. GURNEY TAYLOR.
FREDERICK A. COLLER.
CLYDE L. CUMMER.
JAMES E. PAULLIN, President-Elect.
MORRIS FISHBEIN, Editor, THE JOURNAL.
OLIN WEST, Secretary.
} Ex officio.

OFFICIAL NOTES

DOCTORS AT WAR

Radio broadcasts of Doctors at War by the American Medical Association in cooperation with the National Broadcasting Company and the Medical Department of the United States Army and the United States Navy are on the air each Saturday at 5 p. m. Eastern War Time (4 p. m. Central War Time, 3 p. m. Mountain War Time, 2 p. m. Pacific War Time). An exception is the Chicago area, where the broadcasts are heard by transcription at 10:30 p. m. Saturdays over Station WMAQ. Unless otherwise indicated, each program is summarized by Dr. W. W. Bauer, Director, Bureau of Health Education.

The titles and guest speakers for the next four programs are as follows:

May 1. "Jungle Death."
Speaker, Brig. Gen. C. C. Hillman, Chief of the Professional Services, Office of the Surgeon General, United States Army.

May 8. "Drugs March to War."
Speaker, Dr. Austin E. Smith, Secretary, Council on Pharmacy and Chemistry.

May 15. "High Air."

May 22. "Flash Burns."
Speaker, Rear Admiral Ross T. McIntire, M. C., Surgeon General, United States Navy.

BEFORE THE DOCTOR COMES

The American Medical Association program on Radio Station WLS (890 kilocycles) entitled "Before the Doctor Comes" will be on the air every Thursday morning at 9:45 up to and including May 27. Mrs. June Merrill will interview Dr. W. W. Bauer, Director, Bureau of Health Education, Dr. Edwin P. Jordan, Assistant Editor of THE JOURNAL, or Dr. Austin E. Smith, Secretary, Council on Pharmacy and Chemistry, on common home health problems. The titles for the next four programs are:

April 29. "What to Do About Bleeding."
(Jordan)

May 6. "What to Do About Foreign Bodies in the Nose, Ears, Throat or Eyes."
(Smith)

May 13. "Growing Pains."
(Bauer)

May 20. "Nervous Habits."
(Bauer)

MEDICAL LEGISLATION

MEDICAL BILLS IN CONGRESS

Changes in Status.—The President has signed the Sparkman bill, H. R. 1857, providing that during the present war and for six months thereafter there shall be included in the Medical Departments of the Army and Navy such licensed female physicians and surgeons as the Secretary of War and the Secretary of the Navy may consider necessary. Those appointed will be commissioned in the Army of the United States or the Naval Reserve and will receive the same pay and allowances and be entitled to the same rights, privileges and benefits as members of the Officers' Reserve Corps of the Army and the Naval Reserve of the Navy with the same grade and length of service. H. Res. 189 has been favorably reported by the House Committee on Printing, to authorize the printing as a document of a revised edition of House Document No. 151, Seventy-Seventh Congress, entitled "A Digest of State Laws Affecting the Hard of Hearing and the Deaf," compiled by the State Law Index Section of the Legislative Reference Service of the Library of Congress.

Bill Introduced.—S. 1007, introduced by Senator Hill, Alabama, provides that during the present emergency and for six months thereafter the Chief of the Dental Division, Surgeon General's Office, Army of the United States, shall have the rank, pay and allowances of major general and that there shall be officers of the Dental Corps promoted to the grade of brigadier general at the ratio of one for each six officers of the Medical Corps promoted to like grade.

DISTRICT OF COLUMBIA

Bills Introduced.—H. R. 2464, introduced, by request, by Representative Randolph, West Virginia, proposes to amend existing law relating to the registration of births in the District of Columbia. H. R. 2465, introduced, by request, by Representative Randolph, West Virginia, proposes to redefine the powers and duties of the Board of Public Welfare of the District of Columbia and to establish a Department of Public Welfare.

STATE MEDICAL LEGISLATION

California

Bills Introduced.—A. 573, to amend the business and professions code, proposes to prohibit the board of osteopathic examiners from issuing any drugless practitioners' certificates and to authorize persons holding drugless practitioners' certificates to continue to practice under the authorization of such certificates and to renew them from time to time. A. 667, to amend the health and safety code, proposes, among other things, to add thyroid to the list of drugs which may be sold only on the written prescription of a member of the medical, dental or veterinary profession who is licensed by law to administer such drug and to prohibit the sale of any drugs, medicines or other substances intended to be used for the cure or treatment of gonorrhea, syphilis, chancroid, lymphogranuloma inguinale or granuloma inguinale except on written order of a duly licensed physician.

Connecticut

Bill Introduced.—H. 1265 proposes to make both husband and wife liable for reasonable and necessary services for hospital expenses rendered the husband or wife or a minor child living with the parents.

Florida

Bill Introduced.—H. 10, to amend the naturopathic practice act, proposes, among other things, (1) to increase the course of study in an approved naturopathic school from three to four years, eliminating the prior requirement that no two of such courses may be given in the same year, (2) to require naturopaths, at the time of the annual renewal of their license, to present satisfactory evidence that they have attended the two day educational program conducted by the Florida Naturopathic Physicians Association, Inc., or its equivalent, (3) to provide for the termination of a license to practice naturopathy in the event that the holder thereof fails to renew said license annually and (4) to require naturopaths to register their licenses with the state board of health.

Maine

Bill Enacted.—H. 1352 was approved, April 9. To amend the law relating to infectious and communicable diseases, it requires every physician, within forty-eight hours of the time the fact comes to his knowledge, to report in writing to the state bureau of health any person known by said physician to have any of the following infectious and communicable diseases: syphilis, gonorrhea, chancroid and lymphogranuloma venereum. The law also authorizes the state bureau of health to detain and examine any person believed to be infected with one of the aforementioned diseases and so conducting himself as to expose others to the dangers thereof.

Massachusetts

Bill Introduced.—H. 79, to authorize the inspection of colleges, universities and medical schools, was amended in the house to authorize also an inspection of the premedical collegiate work at colleges and universities and to provide that such inspection shall be made not more than once in every four years.

Missouri

Bill Introduced.—S. 112, to amend the law relating to narcotic drugs, proposes to fix the annual license fee for physicians, dentists, veterinarians, surgeons and other practitioners lawfully entitled to administer such drugs in the course of their professional practice at $1 per annum.

New Jersey

Bill Enacted.—A. 94 has become chapter 74 of the Laws of 1943. To amend the medical practice act, it exempts therefrom persons taking charge temporarily, on written permission of the board, of the practice of a lawfully qualified physician in the state, and sets forth conditions under which the board may grant such temporary permission.

Oklahoma

Bills Enacted.—H. 37 was approved, March 18. It authorizes state and local health officers to examine arrested persons to determine whether or not they are infected with a venereal disease, to detain such persons until the results of the examination are known, and, if found infected, to quarantine such persons for the purpose of treatment. H. 249 was approved, April 12. It creates a special indemnity fund out of which physically impaired employees would receive compensation for additional disability occurring in the course of employment. Physically impaired person is defined as a person who has suffered the loss of the sight of one eye, the loss by amputation of some member of his body, or the loss of the use, or partial loss of the use, of a specific member such as is obvious and apparent from observation or examination by an ordinary layman, that is, a person who is not skilled in the medical profession.

Pennsylvania

Bill Enacted.—H. 504 has become act No. 24 of the Acts of 1943. It exempts physicians in the armed forces or merchant marine from being required to renew their licenses during the term of such service and authorizes such persons to apply for renewal thereof at any time within one year after their discharge.

Rhode Island

Bills Introduced.—S. 177, to amend the law relating to cash sickness insurance, proposes to exempt from the provisions thereof employees who adhere to the teachings of any church, sect or denomination and depend for healing on prayer or spiritual means in the practice of religion. H. 608 proposes an appropriation to be expended for the hospitalization of wives and children of men in the armed services below the grade of commissioned officer who are unable to pay for such hospital care. H. 841 proposes to require an examination of the feet of all school children at least once each year by a licensed chiropodist, who shall report all defects which, if neglected, might unfavorably influence the child's health or physical efficiency.

South Carolina

Bills Introduced.—S. 448 and S. 518 propose a resolution looking to the appointment of a committee to examine into the advisability of establishing a cancer clinic and hospital in the state. H. 500, to amend the chiropractic practice act, proposes that licentiates be graduates of a recognized school or college of chiropractic and have received a minimum of four years, totaling thirty-six hundred hours, training in such school or college.

South Dakota

Bills Enacted.—S. 129 was approved, March 8. It exempts from the basic science act persons engaged in the practice of hydrotherapy. H. 32 was approved, February 9. It provides that osteopaths be required to renew their certificates to practice annually and to submit evidence, at the time of such renewal, of attendance of at least two days at the annual educational program conducted by the South Dakota state osteopathic association during the preceding year.

Texas

Bill Introduced.—H. 651 proposes to authorize a county to erect, equip and operate a hospital for the care and treatment of the sick, infirm or injured.

Utah

Bill Enacted.—H. 49 was approved, March 16. It provides that persons who have entered the military service of the United States during the present war emergency shall be relieved from renewing their licenses annually and from paying an annual renewal fee for such licenses during the period of such service and for six months after its termination.

Vermont

Bills Enacted.—H. 50 was approved, March 18. It amends the medical practice act by repealing the section setting forth the requirements for admission to practice and substituting therefor an authorization that the board shall make rules and regulations covering requirements for admission to practice medicine and surgery. H. 131 was approved, March 16. It amends the osteopathic practice act by authorizing a recognized school of osteopathy to give a course of thirty-six months rather than a four year course of at least five months in each year. H. 151 was approved, March 22. It amends the premarital examination law by authorizing the execution of the required certificate by an osteopath and by a member of the medical corps of the army, navy or public health service, as well as by a person licensed to practice medicine and surgery.

Washington

Bills Enacted.—S. 76 has become chapter 108 of the Laws of 1943. It exempts members of the armed forces from being required to continue in full force and effect their license to practice a profession in the state and provides that the renewal of such license may be made within six months after an honorable discharge. S. 218 has become chapter 75 of the Laws of 1943. It authorizes the director of licenses, during the present emergency, to grant temporary certificates to practice medicine and surgery to physicians duly licensed and qualified to practice under the laws of some other state and proposes that such temporary license shall be valid from the date of issuance until the next regular examination given by the board of examiners. S. 301 has become chapter 240 of the Laws of 1943. To amend the law relating to dentistry, it provides that x-ray diagnosis and examination of the normal and abnormal structures, parts or functions of the human teeth, the alveolar process, maxilla, mandible or soft tissue adjacent thereto be declared to be the practice of dentistry but provides that this act shall not be construed as preventing a regularly licensed physician and surgeon from making any such diagnosis, interpretation or explanation. H. 41 has become chapter 197 of the Laws of 1943. It authorizes the establishment of emergency health and sanitation areas and sets forth certain regulations applicable to the state board of health in connection therewith. H. 127 has become chapter 214 of the Laws of 1943. It makes it unlawful for any person to maintain or operate a maternity home without a license and defines maternity home as any place where women go to be delivered of children.

West Virginia

Bills Enacted.—S. 30 was passed over the governor's veto, March 13. It authorizes state boards of examination or registration to remit all annual license or registration fees required to be paid by any licensee during the time such licensee is serving with the armed forces of the United States and to retain the name of such licensee in good standing during said period. S. 36 was approved, March 19. It provides for the creation of a division of cancer control in the state department of health to administer provisions relating to the diagnosis, treatment and care of persons suffering from cancer, including the conduct of an educational program, the establishment of cancer clinics in general hospitals throughout the state and the furnishing of tissue diagnostic service to all patients. S. 85 was approved, March 9. It authorizes the board of governors of the West Virginia University to establish a four year medical course to be given either at the university or in part at other universities and medical colleges outside the state. S. 141 was approved, March 19. It authorizes the inclusion within an accident and health insurance policy of indemnity for expenses for hospitalization, medical and surgical examination or treatment, nursing care or ambulance transportation of the policyholder, his spouse or his children. H. 120 became law, without the governor's

approval, March 18. It authorizes the formation of a nonprofit, nonstock hospital service corporation for the purpose of furnishing medical service and hospital service to persons who become subscribers with such corporation. Medical service shall consist of medical and surgical care as specified in the subscriber contract and must be provided by duly licensed doctors of medicine. Hospital service shall consist of hospital care as specified in the subscriber contract and must be provided by a hospital which is maintained by a corporation organized for hospital services under the law of the state or such other hospitals as shall be designated by the state department of health and hospitals of other states subject to the supervision of such other state or convalescent care provided for by a convalescent institution. The law is to expire Feb. 28, 1945 unless sooner repealed. H. 230 was approved, March 18. It provides, among other things, that every physician who examines or treats a person having syphilis, gonorrhea or chancroid shall instruct such person in measures for preventing the spread of the disease and inform such person of the necessity of taking treatment until cured. If the person fails to report for treatment, the physician must make a report of such fact to the local health officer.

Wisconsin

Bills Introduced.—S. 253 and S. 279, to amend the law relating to hospital service corporations, would authorize such corporations to provide hospital service in other than participating hospitals to subscribers and their dependents. Furthermore, the subscriber would have the right to choose the particular participating hospital or service hospital in which he wished to be treated. S. 259 proposes to amend the premarital examination law so as to include females as well as males. S. 276, to amend the law relating to hospital service corporations, proposes to authorize such corporations to enter into contracts undertaking to provide for sickness or surgical services and to act as agents in enrolling persons or groups for such sickness or surgical services and indemnity benefits therefor. A. 140, proposing the creation of a bureau of criminal investigation, would, among other things, require every physician, surgeon or other person authorized to engage in the practice of healing, whether licensed or not, to report to the proper police authorities all bullet wounds, gunshot wounds, powder burns or any other injury arising from or caused by the discharge of a gun, pistol or any other firearm, which wound he is called on to treat, dress or bandage. A. 380 proposes that any physician, surgeon or osteopath in charge of the medical treatment or hospitalization of any minor who has suffered any serious cranial or spinal injury, hemorrhage, laceration or concussion within fifteen days from the date of an injury shall make a report thereof to the local and state boards of health and the district school board. A. 601, to amend the workmen's compensation act, proposes to authorize injured employees to select chiropractors or osteopaths not on the employer's physician panel and to make the employer liable for reasonable expenses incurred in treatment by such practitioners.

WOMAN'S AUXILIARY

Arkansas

The Woman's Auxiliary to the Pulaski County Medical Society met, February 17, at the home of Mrs. Pat Murphey. Mrs. Homer Higgins, chairman of the sewing committee, reported that in the past month her committee had put in four hundred and thirteen hours at the Camp Robinson Day Room furnished by the auxiliary and had in that time altered two hundred and sixty-seven garments for the men. Mrs. Charles A. Henry enlisted the services of enough volunteers to man for one week a grocery store to assist the grocer in acquainting customers with the food rationing plan. Mrs. R. T. Smith introduced Ensign Corabel Hamilton, who addressed the meeting on the activities of the Waves enlistment program now in progress in Arkansas.

Florida

A meeting of the Woman's Auxiliary to the Duval County Medical Society was held at the home of Mrs. Victor Hughes on January 14. Mrs. S. R. Norris introduced Lieut. Linda V. Barnes of New York, who spoke on "The Life of a Waac." The defense chairmen, Mrs. Charles Henley and Mrs. George Richardson, reported on the Hallowe'en party given for the service men in October. Auxiliary members sold $50.65 worth of tuberculosis seals at the Roosevelt Hotel booth in December and assisted with the blood bank to the amount of $335.22. Mrs. F. W. Krueger, state president, talked on the objectives of the national auxiliary.

New York

Mrs. James F. Roohan has been reelected president of the Saratoga County medical society's auxiliary. Dr. William H. Ordway thanked the group for serving coffee and sandwiches to blood donors. Sewing is to be started for the hospital. Mrs. H. Dunham Hunt, who has taken over the work, has asked for more blankets to be used in the air raid shelters. The names of the owners will be attached to the blankets so that they can be returned later on. A gift of $4.24 was received from the school children of Mechanicville, grade 8A3, for the air raid shelter equipment. The auxiliary is outfitting these shelters.

The second district branch meeting was held in Garden City, with the Suffolk County auxiliary as hostess. Mrs. J. Emerson Noll, auxiliary state president, was guest of honor. Members from Kings, Queens and Nassau were present. Dr. George W. Cottis, president of the state medical society, spoke at the luncheon. Dr. Joseph Lawrence spoke on "Legislation." The general chairman was Mrs. George P. Bergmann, president of the Suffolk County auxiliary. A needlepoint footstool was given to the auxiliary on which $100 was realized for charity.

Pennsylvania

Sixty members of the Berks County Medical Society and its woman's auxiliary met at the Wyomissing Club, Reading, for an evening of fellowship and music. Dr. Wellington A. Lebkicker, president of the medical society, and Mrs. Chester K. Kistler, vice president of the auxiliary, received the guests. A program of music was presented by Dr. Charles A. Haff and three artists from Northampton. Mrs. Jessie Foster Rose of Pittsburgh, granddaughter of Stephen C. Foster, was introduced, and J. Bennett Nolan, Reading, lecturer and traveler, spoke on "Reminiscenses of a Historical Town."

The Chester County auxiliary met at a covered dish luncheon at the home of Mrs. Oscar J. Klevan, West Chester. Mrs. C. Reinold Noyes spoke on "What Kind of a Peace Do We Want."

Texas

The Bexar County auxiliary observed its Army Day program recently at the Medical Library Building, San Antonio. Col. George E. Beach, commanding officer of Brooke General Hospital, talked about Army hospitals. The Gray Ladies of the Red Cross hospital and recreation corps were honor guests. Members of the auxiliary brought gifts for the Gray Ladies to use as prizes in games which they conduct for soldiers in hospitals. Mrs. G. P. Robertson, a member of the Gray Ladies Corps, spoke briefly of the activities of the corps. The program was presented under the direction of Mrs. I. T. Cutter, chairman of the Gray Ladies Corps.

Washington

At the annual meeting of the executive board a resolution was adopted making Daisy Searles Mosiman, of Seattle, an Honorary Life Member of the Woman's Auxiliary to Washington State Medical Association. Mrs. Mosiman formerly was President of the Woman's Auxiliary to the American Medical Association.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

CALIFORNIA

Annual Heart Meeting.—The California Heart Association will hold its annual meeting at the Biltmore Hotel, Los Angeles, May 1, with Lieut. Comdr. Harold Rosenblum, M. C., U. S. Naval Reserve, Oakland, presiding. Among the speakers will be Dr. Wilbur A. Beckett, Los Angeles, on "Acute Gout Caused by Aminophyllin"; Dr. Samuel J. McClendon, San Diego, "The Incidence of Acute Rheumatic Fever in Southwestern United States"; Lieut. Comdr. Richard F. McLaughlin, M. C., U. S. Naval Reserve, Oakland, "Rheumatic Infection in a Plateau Area," and Dr. Jacob S. Kasanin and Capt. Meyer Friedman, M. C., U. S. Army, San Francisco, "Hypertension in Only One of Identical Twins." Guest speakers will be Drs. George Blumer, New Haven, Conn., and Alvin G. Foord, Pasadena.

CONNECTICUT

State Medical Meeting.—The one hundred and fifty-first annual meeting of the Connecticut State Medical Society will be held at the New Haven Lawn Club, May 25-27, under the presidency of Dr. Roy L. Leak, Middletown. Among the speakers will be:

Dr. Thomas Duckett Jones, Boston, Rheumatic Fever and Rheumatic Heart Disease.
Dr. George H. Gehrmann, Wilmington, Del., Medicine in Wartime Industry.
Dr. James C. McCann, Worcester, Mass., Prepaid Medical Service Plans.
Dr. James E. Paullin, Atlanta, Ga., President-Elect of the American Medical Association, The Contribution of the Medical Profession in the Present War Effort.
Dr. Joseph Stokes Jr., Philadelphia, Practical Applications of Air Sterilization.
Dr. Marion E. Kenworthy, New York, The Dynamic Use of Psychiatric Principles in the Present Emergency.
Dr. Walter W. Williams, Springfield, Mass., Sterility.
Dr. John D. Currence, New York, Arthritic and Rheumatic Conditions Amenable to Physical Therapy.
Dr. Willard C. Rappleye, New York, Medical Education in Wartime.
Dr. H. Jackson Davis, Albany, N. Y., Public Medical Care for Indigents.
Dr. Reginald H. Smithwick, Boston, The Surgical Treatment of Hypertensive Disease.
Brig. Gen. David N. Walker Grant, M. C., U. S. Army, Medical Services to the Air Forces—U. S. A.
Comdr. Bartholomew W. Hogan, M. C., U. S. Navy, Navy Medical Corps in Wartime.
Dr. Moses H. Lurie, Boston, Deafness in the War and in the War Industries.
Dr. Ramon Castroviejo, New York, Comments on Ophthalmic Surgery.
Major Allston L. Fogg, M. C., Army of the United States, Orthopedic Regulations for Induction.
Dr. Felix G. Fleischner, Greenfield, Mass., Roentgenologic Aspects of Atypical Pneumonias and Related Conditions.
Dr. Alan R. Moritz, Boston, Special Evidentiary Objectives of Medicolegal Autopsies.
Dr. Clay Ray Murray, New York, Surgical Treatment of the Hand in the General Practitioner's Office.

At a meeting of the house of delegates on the first day the program will be devoted to a round table discussion of "Prepaid Medical Service." Other groups meeting at this time will be the Connecticut Hospital Association, American Association of Medical Social Workers, Connecticut Occupational Therapy Society, the Society of Medical Record Librarians and the Women's Medical Society.

ILLINOIS

Conference on Industrial Health.—The division of industrial hygiene of the state department of public health sponsored a conference in La Salle, April 8. Among the speakers were:

Dr. Milton H. Kronenberg, Chicago, Objectives of the Conference.
Dr. Paul A. Brehm, Madison, Wis., Absenteeism in Industry—Its Causes and Control.
Dr. Oscar A. Sander, Milwaukee, Tuberculosis in Industry.
Dr. Edward C. Holmblad, Aurora, How the Small Plant Can Conduct a Health Program.
Mr. Harry Guilbert, director, bureau of safety and compensation, Pullman Company, Chicago, A New Era for Health and Safety in Industry.
Dr. Chauncey C. Maher, Chicago, What About the Health of the Executive? Is His Heart Next?

Dr. John L. Rock, Oglesby, chairman of the industrial health committee of the La Salle County Medical Society, presided at the morning session and Dr. Orie C. Yoder, Peru, president of the society, at the evening session.

Chicago

Second Cancer Forum.—The Chicago Cancer Committee, Inc., will hold the second of its series of forums for the public on cancer in the John B. Murphy Memorial Auditorium at the American College of Surgeons, April 27. "Facts About Cancer" will be the theme of the forum with the Rev. Harrison Ray Anderson, D.D., pastor of the Fourth Presbyterian Church, acting as moderator. Dr. Ludvig Hektoen, chairman of the cancer committee, will present the introduction. The speakers will include:

Dr. Bowman C. Crowell, The Course of Cancer.
Dr. Josiah J. Moore, The Causes of Cancer.
Dr. Herbert E. Schmitz, The Diagnosis of Cancer.
Dr. John A. Wolfer, The Curability of Cancer.
Dr. Frederick W. Merrifield, What the Patient Can Do About It.

Annual Public Health Meeting.—The third annual public health conference of the Illinois Public Health Association will be held at the Hotel La Salle, May 14-15, with W. P. Shahan, Springfield, president, acting as chairman. One session will be devoted to war trends in public health, consideration to be given to maternal and child health, day care for war workers' children, nutrition in the school, high school physical fitness, industrial hygiene and civilian venereal disease control. Dr. Roland R. Cross, director of the state department of public health, Springfield, will be toastmaster at the banquet with Dr. Herman N. Bundesen, Chicago; Gov. Dwight H. Green (tentative) and Dr. Robert Hughes Parry, medical officer of health for the city and port of Bristol and professor of preventive medicine at the University of Bristol, England, who will discuss "Shelter Life in the Blitzed City." Among the speakers at the administrative session will be Lieut. Col. E. Mann Hartlett, M. C., U. S. Army, on "Public Health Needs Revealed by Selective Service Examinations"; Dr. G. Foard McGinnes, St. Louis, "Administrative Responsibilities of the American Red Cross in Relation to Public Health," and Howard J. Shaughnessy, Ph.D., Chicago, "The Plasma Distribution Program of the Illinois Department of Public Health." A technical session will be devoted to industrial sanitation and house keeping in industry, the sanitary engineer in public health during wartime, public health milk control during wartime, duration of passive protection of hyperimmune western equine encephalomyelitis serum and laboratory studies of epidemic keratoconjunctivitis.

IOWA

Public Health Meeting.—The seventeenth annual session of the Iowa Public Health Association will be held, April 27-28, at the Hotel Kirkwood, Des Moines. Dr. Robert Hughes Parry, medical officer of health of the city and port of Bristol, England, will discuss "Some Wartime Health Problems." Other speakers will include Dr. Felix J. Underwood, Jackson, secretary and executive officer of the Mississippi State Board of Health, on "Public Health Today"; Dr. Walter C. Alvarez, Rochester, Minn., "Problems of Constitutionally Frail People"; Byron J. Olson, Bethesda, Md., passed assistant surgeon, U. S. Public Health Service, "Report of the Field Study and Lung Calcification in Iowa," and H. A. Whittaker, B.A., Minneapolis, "Some Problems in Sanitation."

Center to Process Plasma.—The Serum-Plasma Center of the state department of health, Des Moines, has announced its readiness to cooperate with participating hospitals of Iowa in the preparation of pooled plasma. The center will receive citrated blood from hospitals, prepare plasma and return the finished product to hospitals that participate in the work. The center has been cooperating in the procurement and distribution of pooled normal human plasma and serum with the Emergency Medical Service of the Office of Civilian Defense with hospitals that maintain a blood plasma bank and with organizations and groups that sponsor blood donor programs. Until further notice the actual cost to a participating hospital will be $3.50 for each 250 cc. unit of plasma prepared from bottles of citrated blood. The purpose of the department's Serum-Plasma Center is to offer its facilities to hospitals which desire to secure at minimum cost safe, sterile plasma adequate for their needs.

MAINE

New Chairman of Procurement and Assignment.—Dr. Roland L. McKay, Augusta, has been appointed state chairman for physicians in the war procurement and assignment service for physicians, dentists and veterinarians to succeed Brig. Gen. John G. Towne, M. C., U. S. Army, retired, Waterville. General Towne will continue to serve as medical adviser for the Maine Selective Service.

NEBRASKA

Changes in the Faculty at University.—Dr. John Hewitt Judd, associate professor of ophthalmology, has been named chairman of the department of ophthalmology at the University of Nebraska College of Medicine, Omaha. Other changes include the following promotions:

Dr. Harold Gifford Jr. to associate professor of ophthalmology.
Dr. David P. Findley to assistant professor of gynecology and obstetrics.
Dr. Harley E. Anderson to assistant professor of obstetrics.
Dr. Robert J. Stearns to associate professor in gynecology.
Dr. Charles P. Baker to assistant professor in pathology and bacteriology.
Dr. Herman F. Johnson to associate professor of orthopedics and surgery, in charge of the division of fractures.

NEW YORK

Rabies in a Squirrel.—A cement finisher in Rockland County was recently bitten by a squirrel when he reached into a tool box. A second workman sprang to his aid and was also bitten. Subsequently laboratory examination gave evidence that the common gray squirrel was rabid and the 2 workmen were given injections of antirabic vaccine.

Postgraduate Education.—On May 21 a graduate lecture on "Sulfonamide Therapy" will be presented before the Cortland County Medical Society, Cortland, under the auspices of the state medical society and the state department of health. Dr. Charles D. Post, professor emeritus of clinical medicine, Syracuse University College of Medicine, will be the lecturer. Dr. Norman H. Plummer, New York, gave a similar lecture for the Putnam County Medical Society in Carmel, April 7. Dr. Earle B. Mahoney, Rochester, lectured on "Plasma Therapy and Whole Blood Transfusion," April 6, under the same auspices at a joint meeting of the Onondaga County Medical Society and the Syracuse Academy of Medicine.

State Medical Meeting.—The Medical Society of the State of New York will hold its annual session at the Hotel Statler, Buffalo, May 3-6, under the presidency of Dr. George W. Cottis, Jamestown. Included among the out of state speakers will be:

Dr. George Baehr, chief medical officer, Office of Civilian Defense, Washington, D. C., British and American Experiences in Civil Defense.
Dr. Maurice H. Seevers, Ann Arbor, Mich., The Narcotic Properties of Carbon Dioxide.
Capt. Barnett A. Greene, M. C., Army of the United States, Prolonged Intravenous Pentothal Anesthesia for Military Surgery.
Dr. Louis Schwartz, Bethesda, Md., Occupational Acnes.
Drs. Joseph C. Yaskin, Helena E. Riggs and Anthony S. Tornay, Philadelphia, and Henry Alsop Riley, New York, Bilateral Blindness Due to Lesions in Both Occipital Lobes.
Dr. Francis Heed Adler, Philadelphia, Gas Injuries.
Dr. Harry S. Gradle, Chicago, Early Recognition and Management of Glaucoma.
Dr. Chevalier L. Jackson, Philadelphia, Treatment of Cancer of the Larynx by Surgery and Irradiation.
Dr. David E. Robertson, Toronto, Use of Sulfonamides in Treatment of Acute Osteomyelitis in Children.
Lydia J. Roberts, Ph.D., Chicago, Scientific Basis for Our Present Dietary Standards.
Lieut. Col. Thomas T. Mackie, M. C., U. S. Army, Tropical Diseases —A Postwar Health Problem.
Lieut. Col. Paul F. Russell, M. C., Army of the United States, Military Malaria Control.
Lieut. Col. Claude S. Beck, The Principles Concerning the Surgical Approach to the Treatment of Angina Pectoris.
Dr. Joseph H. Pratt, Boston, Advances in Diagnosis and Treatment of Pancreatic Disease.
Dr. Robert E. Gross, Boston, Surgical Treatment of Patent Ductus Arteriosus.
Raymond A. Vonderlehr, assistant surgeon general, U. S. Public Health Service, Washington, D. C., Syphilis Control at the Beginning of World War II.
Lieut. Comdr. Leo A. Shifrin, M. C., U. S. Naval Reserve, Venereal Diseases—A Navy Problem.
Major William Bisher, M. C., Army of the United States, Venereal Disease Control as Applied to the Army.
Dr. Jessie Wright, Pittsburgh, Problems in Early Physical Treatment of Poliomyelitis.
Lieut. Sidney H. Licht, M. C., Army of the United States, Fever, and Sulfadiazine Therapy in Refractory Gonorrhea.

The program will also include symposiums on plasma, medical services in industry, carcinoma of the colon and rectum, electroshock therapy, rheumatic fever and venereal diseases with regard to the armed forces. In addition there will be a round table discussion on anesthesiology as applied to war casualties.

New York City

Committee on Cardiovascular Diseases in Industry.—The New York Heart Association has formed a committee on cardiovascular diseases in industry to advise concerning the employment of persons with cardiovascular diseases. It is planned to use the facilities of the New York Heart Association, which consists of sixty-six cardiac clinics, in furthering this work. Dr. Clarence E. de la Chapelle is chairman of the committee. Other members are Drs. Donald B. Armstrong of the Metropolitan Life Insurance Company, Oswald F. Hedley, surgeon of the U. S. Public Health Service, Ada Chree Reid of the Metropolitan and Cassius H. Watson of the American Telephone and Telegraph Company. It is planned to add to the committee as the need arises. Although the committee was originally formed for the purpose of dealing with cardiac problems in industry in New York, it is not intended to limit the scope of its activities to that locality.

New Merchant Marine Polyclinic.—A clinic was to be opened in March for seamen sailing on Netherlands vessels, the New York *Times* reported recently. The clinic will be housed on the eighth floor of 61 Broadway, the offices of the Netherland Shipping Committee, and will include a suite of fourteen rooms. Service will be given to about 20,000 men serving under the Dutch flag, most of whom will be passing through the Port of New York. The clinic will have facilities for diagnosis and outpatient treatment and an arrangement with New York physicians and hospitals for additional treatment when required. Dr. Frans E. van der Gugten, a graduate of the University of Leyden, chief medical officer of the Netherland Shipping Committee, will be in charge of the clinic. In a statement to the press he is reported to have said that "the service is considered a very essential one for the proper maintenance of full health standards for the men on our ships. Before the war each individual steamship company had its own medical department at its home port, but since Holland was occupied by the Germans these have, of course, been unavailable. This handicap has been further complicated by the greater incidence of psychologic problems brought on by the war, both through the men's lack of home contacts and the removal of customary means of obtaining consultation and treatment for minor ailments, causing bewilderment and mental distress."

OKLAHOMA

Personal.—Robert H. Graham, Oklahoma City, has returned to his position as executive secretary of the Oklahoma State Medical Association after four months in Washington, D. C., as adviser to the Office of Procurement and Assignment.—— Dr. James O. Asher, Oklahoma City, has been appointed medical superintendent of Western Oklahoma Charity Hospital, Clinton. Dr. Willard H. Smith, Clinton, resident surgeon, has been acting superintendent of the hospital since Lieut. C. E. Griffith left several months ago to enter the army.——Joseph B. Goldsmith, Ph.D., associate professor of histology and embryology at the University of Oklahoma School of Medicine, Oklahoma City, has been granted a leave of absence to enter the army as first lieutenant in the sanitary corps. Ruth Alden McKinney, Ph.D., formerly of the Institute of Pathology of the Western Pennsylvania Hospital, Pittsburgh, has been appointed instructor in clinical pathology, effective March 1, to succeed Dr. Erik Eselius, resigned.

PENNSYLVANIA

Survey of Industrial Plants.—The bureau of industrial hygiene of the state department of health recently conducted a survey in Dauphin County of eighty-four industrial plants with 18,933 employees. The work revealed that full time physicians are employed in none of the plants but part time physicians are employed in seven plants; full time nursing service is available in four plants and part time service is furnished in three plants; preemployment examinations are required in sixteen plants and periodic examinations are given in sixteen plants; ten plants are inspected regularly for hazardous conditions by the plant physician; twenty-two plants spent less than $100 on their medical programs, other than compensation cases, during the year 1941. Thirty-two of the remainder had no record of expenditure of this type; plant medical departments handled about 6,200 cases during 1941; twenty-four plants have a sick benefit association and thirty plants have a hospital insurance plan; twenty-three plants signified their interest in having a physician make health talks to their employees; only ten organizations stated that an industrial hygiene survey had been made in their plant during the past two years, but seventy-five expressed interest in having a survey made; ten plants have venereal disease control programs, eight plants have dispensaries and two plants have cafeterias.

Philadelphia

Shmookler Memorial Lecture.—Dr. Foster Kennedy, professor of clinical medicine (neurology), Cornell University Medical College, New York, will deliver the H. B. Shmookler Memorial Lecture at the Mount Sinai Hospital, May 3. His subject will be "Neuroses in Warfare."

Universities Share in Bequest.—The residue of the estate of Major Henry Reed Hatfield valued at one million dollars has been bequeathed, after the payment of $226,000 in specific bequests to charities, to the University of Pennsylvania and to Jefferson Medical College of Philadelphia.

Drug Stores Close Earlier.—Six hundred pharmacists in Philadelphia assembled in mass meeting on March 25 and unanimously agreed to adopt a schedule of earlier closing hours as submitted and endorsed by the Philadelphia Association of Retail Druggists. Effective April 15 all stores will close Monday through Friday at 10 p. m., Saturdays at 11 p. m. and Sunday, optional, 1-6 p. m. or at 6 p. m. for the night. Assurances were given that at all times pharmacists would respond to emergency calls, but physicians are requested to send in their evening prescriptions as early as possible or to have them delivered the following morning. According to *Philadelphia Medicine*, this movement will become national as a part of the Government's Victory Business Plan.

SOUTH DAKOTA

Dr. Giedt Acting Superintendent of Health.—Dr. Walvin R. Giedt, Vermillion, assistant state health officer and formerly assistant professor of pathology at the University of South Dakota School of Medical Sciences, is now acting superintendent of the state board of health. He will serve until a permanent selection is made to succeed Dr. John F. D. Cook, Pierre, who died on January 27. Dr. Giedt has served as director of laboratories of the state board of health.

TEXAS

Personal.—Frank M. Stead, Ph.D., formerly of the Los Angeles City Department of Health, has been appointed assistant professor of preventive medicine at the University of Texas Medical Branch, Galveston.

Change in Dates of State Meeting.—The State Medical Association of Texas will meet in Fort Worth, May 5-6, instead of May 3-6. The session this year will include only a meeting of the house of delegates.

Hospital News.—A new 60 bed wing has been opened at Hendrick Memorial Hospital, Abilene, to meet the demand for facilities that arose when Abilene became an army town. The new wing, together with an extension of the north wing of the existing building and remodeling at various points, cost about $150,000. The project was financed largely by federal funds under the Lanham Act. Local funds amounted to more than $35,000.

Five Year Child Health Program.—The William Buchanan Foundation of Texarkana has given the University of Texas, Austin, $200,000 for a five year program on child health. The details were concluded at a meeting in Galveston recently between Dr. Stanley J. Seeger, Texarkana, president of the foundation, and Chauncey D. Leake, Ph.D., dean of the university's medical branch, Galveston. To be launched within the near future, the program will be worked out in conjunction with the department of pediatrics of the medical branch, correlating the activities of the department and other state and national agencies. Its purpose is to afford the profession in Texas with an opportunity to maintain the latest methods in connection with the promotion of child health, especial attention to be given to the problems of the adolescent in wartime.

VIRGINIA

Rheumatic Fever Demonstration.—About 150 children in Richmond and adjoining counties have been diagnosed as having rheumatic fever during a demonstration that has been conducted for the past two years by the state department of health. The children are being cared for in their own homes or hospitals and convalescent homes set up in the Richmond area. A diagnostic clinic provided with modern equipment and manned by specially qualified clinicians is operated by the state department of health in cooperation with the outpatient department of the Medical College of Virginia, Richmond. According to Dr. Irl C. Riggin, Richmond, state health officer, it is expected that adequate care for these children eventually will become available throughout the state.

WASHINGTON

Personal.—Robert H. Fishbach, passed assistant surgeon, U. S. Public Health Service Reserve, formerly of Hawaii, has been appointed director of the Lewis-Pacific Counties Public Health Department.——Dr. Harold B. Stout, Brewster, has been named health officer of Pateros.——On February 17 the Spokane County Medical Society held a banquet in honor of Dr. Erich T. Richter, Spokane, who is in his fifty-second year in the practice of medicine.

GENERAL

Wartime Hospital Conference.—The executive board of the Catholic Hospital Association of the United States and Canada announces a wartime conference at the William Penn Hotel, Pittsburgh, June 11-14.

Inter-State Postgraduate Meeting.—The Inter-State Postgraduate Medical Association of North America will hold a four day instructional course at the Palmer House, Chicago, October 26-29, constituting the twenty-eighth annual meeting.

Gorgas Hospital Requests Scientific Material.—The Gorgas Hospital, Ancon, Canal Zone, which has recently reorganized its library, is interested in securing lists of publications in the field of medicine and allied sciences and also scientific films. All communications should be directed to Major Aubrey LeV. Bradford, M. C., U. S. Army, assistant to the superintendent of the hospital.

International College of Surgeons.—The fourth International Assembly of the International College of Surgeons will be held at the Waldorf Astoria Hotel in New York, June 14-16, in conjunction with the eighth assembly of the United States chapter. The program will be devoted to war surgery and rehabilitation. Dr. Fred H. Albee, New York, is president of the international college and Dr. Thomas A. Shallow, Philadelphia, of the national chapter. Additional information may be obtained from Dr. Max Thorek, Chicago, the international executive secretary.

Meetings Canceled.—The 1943 annual meeting of the National Tuberculosis Association has been canceled. A meeting of the board of directors has been called at the Hotel Statler, St. Louis, May 5-6, to transact necessary business. On May 5 there will also be business sessions of the council of the American Trudeau Society, the medical section of the National Tuberculosis Association, and the executive committee of the National Conference of Tuberculosis Secretaries. The same evening Dr. James Burns Amberson Jr., New York, will give his presidential address, and the award of the Trudeau Medal for 1943 will be made.——The American Association for the Study of Allergy has canceled its 1943 meeting.

Association for Advancement of Science.—Dr. Paul D. Lamson, professor of pharmacology, Vanderbilt University School of Medicine, Nashville, Tenn., was chosen vice president in charge of Section N (medical sciences) of the American Association for the Advancement of Science. The election of officers for 1943 was delayed because of the cancellation of the New York meeting. The section officers and other members were chosen by a mail ballot. In the second ballot necessary for the office of president, since no person received a majority vote, Isaiah Bowman, LL.D., president of Johns Hopkins University, Baltimore, was chosen president of the association to succeed Arthur H. Compton, LL.D., University of Chicago.

Dr. Charles Huggins Receives First Mayer Award.—Dr. Charles B. Huggins, professor of surgery (urology) at the University of Chicago School of Medicine, has been chosen as the first recipient of a $2,000 prize given by r. Charles L. Mayer and administered by the National Science Fund of the National Academy of Sciences. The award was offered for the most outstanding contribution made during 1942 to present day knowledge of factors affecting the growth of animal cells with particular reference to human cancer, and as a new type of prize for the advancement of fundamental scientific research administered under a new type of philanthropic foundation (THE JOURNAL, Dec. 5, 1942, p. 1150). Specifically the award went to Dr. Huggins for his studies on the human prostate, with special relation to the cancers taking origin from this gland. The prize will be presented to Dr. Huggins at the annual dinner of the board of directors of the National Science Fund later this spring. A second Charles L. Mayer award of $2,000 for an outstanding study in the same field in 1943 will be given. Entries and recommendations for consideration for the award should be in the office of the National Science Fund, 515 Madison Avenue, New York, by Jan. 15, 1944. The advisory committee assisting the science fund in selection of the prize winner is interested primarily in fundamental studies on the factors influencing growth of animal cells rather than applications to any particular aspect of normal or abnormal growth.

LATIN AMERICA

Society Meetings.—All the phthisiologic societies of Argentina plan to hold a reunion in Rosario in May. "The Treatment of Empyema" and "Intestinal Tuberculosis" will be discussed.——The first special meeting of leprologists is to be held in Buenos Aires, May 1, in accordance with plans agreed on at a meeting of the Association of Argentinian Dermatologists and Syphilologists in 1942.

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 6, 1943.

The Beveridge Scheme

A debate of three days on the Beveridge scheme in the House of Commons has been followed by one of two days in the House of Lords. The situation is well summarized by the *Times*, which describes the government as morally, if not financially, committed to a far reaching program of social advance that includes state financed children's allowances, a national medical service of free treatment for all, a unified social insurance system embracing every section of the community and important changes in old age pensions, widows' pensions and funeral benefit insurance. The scheme is certainly the most comprehensive ever presented by any British government. It has the approval of all the political parties, and criticisms are few and slight, but an acute difference has arisen with the labor party as to precedure.

THE MEDICAL SERVICES

In the House of Lords Lord Dawson (consulting physician to the London Hospital) defined the attitude of the medical profession toward the replanning of medical services, which it had been studying closely for two years. The realization of hopes as regards medicine must be very slowly carried out. They should go step by step in agreement with the different parties. But certain matters were ready to be tackled now. The first was the great importance of bridging over the gap in theory and practice between preventive and curative medicine. They had remained detached because of the gap in their development, which had been disadvantageous to both. Hospital practice and general practice must comprise the care of public and individual health. Health officers must come out of their obscurity and come on to the staff of hospitals and meet regularly their medical colleagues. Medical education must be altered so that a student in the earliest days was told that the building up of health must take the first place. The practice of medicine must become increasingly institutional. Team work was a necessity. The care of child health should take precedence over almost everything else at this moment, because we wanted the children and wanted them well.

We could not construct a great healing service, such as he hoped, except under the skilled guidance of the medical profession. The medical profession could not be expected to be moved about and take its orders from the laity. Under the authority of Parliament, the profession wanted self determination, just as the judicial bench, bar and church looked after their own affairs without let or hindrance. Just as the profession was taking a prime responsibility in putting the proposals forward, so it would expect to take an equal part in their guidance. The medical profession had the difficulty that in order to do good planning it must have collectivism, but it must also have 100 per cent individualism in personal relations.

The Sterilization of Sulfanilamide Powder

The report of a fatal case of tetanus, possibly due to infection from the container of a sulfonamide powder, has led to the calling of a conference of clinicians, bacteriologists and representatives of British chemical manufacturers to consider methods of sterilizing sulfonamide powder for local application, as has already been done in the United States. It has been shown that if sulfanilamide powder contaminated with tetanus spores is implanted in animals the drug does not prevent the development of tetanus. At a conference recently held between representatives of the Medical Research Council and the Association of British Chemical Manufacturers it was agreed that the Hynson, Westcott and Dunning procedure, adopted in the United States, was suitable for British manufacturers and that the powder thus sterilized should be issued in sterile packages of 5 Gm. But as this procedure would take some time to put into full effect and could not in any event be applied to existing stocks held in hospitals and at aid posts, the conference considered methods suitable for small scale sterilization. It was thought that lack of uniformity in results reported by investigators for a particular method which theoretically should have proved satisfactory was due to minor variations in technic and especially to the known variability of different commercial preparations of sulfanilamide powder as to chemical purity and physical properties. Thus the thermostatic control of a hot air oven, without a check on the temperature of the powder itself, was insufficient. Caking and discoloration on heating might depend on the purity, moisture content and particle size of the powder. It was agreed that a powder should not show more than slight discoloration after heating at 150 C. for an hour.

For small scale sterilization of sulfanilamide in hospitals three alternative methods were recommended: 1. Dry heat at 150 C. for one hour in a paraffin bath, using half filled test tubes plugged with sterilized cotton wool and flaming the upper portion of the tubes. 2. Dry heat at 150 C. for one hour in an electric oven, with precautions to ensure even heating throughout. 3. Autoclaving in a dressing sterilizer by the technic and with the precautions proposed by W. J. Buckland. For each of these methods to be satisfactory the sulfanilamide powder should not cake or be more than slightly discolored. The recommendations relate only to sulfanilamide, but the paraffin bath technic has been recommended by its author, Berry, as suitable for sulfathiazole in hospital practice.

The Ministry of Health's Publicity Campaign Against Venereal Diseases

In a previous letter to THE JOURNAL the Ministry of Health's campaign against venereal diseases by an advertisement in the newspapers throughout the country showing their dangers and what those who contracted them should do has been described. Another measure is distribution through the local authorities of three pamphlets prepared by the Central Council for Health Education which are entitled "What Are the Venereal Diseases?" "Facts of Sex for Men" and "Women in Wartime." The nature of syphilis and gonorrhea is briefly explained. The danger of promiscuous sexual intercourse is pointed out, as well as the importance of early treatment. With regard to the danger of becoming the parent of an illegitimate child, men are told that no birth control methods are 100 per cent certain. Those who go overseas are informed that the licensed or tolerated brothels which exist in some countries are hotbeds of disease. To women it is pointed out that the old idea of their place being in the home is disappearing and that the war has tremendously hastened this movement. As a result of it they are working with men more closely and constantly than ever before. The resulting danger and the proper place of sex in life are stated. The danger of exciting men's sexual desire by allowing physical contacts is emphasized. In any case of doubt or difficulty they should consult their doctor or medical officer. Advice can also be obtained in the strictest confidence from the Central Council for Health Education, whose address is given.

Deaths

Edmund Janes Doering ✠ Chicago; Chicago Medical College, 1874; president of the Chicago Medical Society 1886-1887; past president of the Chicago Gynecological Society and the Chicago Medico-Legal Society; a governor of the Institute of Medicine of Chicago; a lieutenant colonel in the medical corps of the U. S. Army in 1918 and since 1922 colonel in the medical reserve corps; served as a surgeon in the U. S. Marine Hospital Service; in 1918 president of the U. S. Examining Board of the Medical Reserve Corps; in 1919 was appointed senior surgeon in the U. S. Public Health Service; appointed district medical officer for Illinois, Michigan and Wisconsin of the Federal Board for Vocational Education in 1919; chief consultant of the U. S. Veterans Bureau; a founder and fellow of the American College of Surgeons; president of the Illinois division of the medical reserve corps of the U. S. Army and honorary president of the Chicago chapter; governor of the Military Order of the World War and in 1930 was commander of the Chicago chapter; governor of the National Reserve Officers' Association, 1922-1923, and honorary president of the medical chapter; consulting physician to the Chicago Lying-In and Michael Reese hospitals; in 1936 was a member of the board of public health advisers in the Illinois Department of Public Health; in 1916 received the honorary degree of master of science from Northwestern University; editor of the *Chicago Medical Recorder* for many years; aged 88; died, March 1, of coronary sclerosis.

Ralph Leonidas Byrnes, Los Angeles; State University of Iowa College of Medicine, Iowa City, 1906; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; formerly professor of bacteriology and pathology at the University of Utah School of Medicine, Salt Lake City; professor of pathology, bacteriology and clinical microscopy at the University of Southern California, 1915-1916; professor of diseases of the chest at the College of Medical Evangelists from 1919 to 1923; director of the Utah State Board of Health and Laboratory from 1911 to 1915; member of the American Public Health Association; past director and chairman of the committee of the Los Angeles Academy of Criminology; first lieutenant in the Utah National Guard from 1912 to 1915; served as captain, major, surgeon and president of the board of tuberculosis examiners in military camps in the United States from 1917 to 1919; founded an endocrine and mental hygiene clinic, Belvedere Health Center, Los Angeles County Health Department, in 1930; on the staffs of the Los Angeles General, White Memorial and California Lutheran hospitals; aged 64; died, February 16, of coronary thrombosis.

Walter Joseph Wherry, Omaha; University of Nebraska College of Medicine, Omaha, 1935; member of the Nebraska State Medical Association, Omaha-Council Bluffs Ophthalmological and Otolaryngological Society, Omaha Mid-West Clinical Society and the American Academy of Ophthalmology and Otolaryngology; specialist certified by the American Board of Otolaryngology and assistant secretary-treasurer; instructor in otolaryngology at his alma mater; member of the staffs of the University of Nebraska Hospital, Douglas County Hospital and St. Catherine's Hospital; on the visiting staffs of the Bishop Clarkson Memorial Hospital and Nebraska Methodist Hospital and Deaconess Home; son of the late Dr. William P. Wherry; aged 37; died, April 1, of hypernephroma.

Thomas Arthur Clay ✠ Paterson, N. J.; Columbia University College of Physicians and Surgeons, New York, 1903; fellow of the American College of Surgeons; past president of the Passaic County Medical Society; in 1908 county coroner; from 1906 to 1913 was medical inspector of the city public schools; formerly member of the board of health and city health officer; served in the medical corps of the U. S. Army during World War I; from 1923 to 1928 director of the Paterson Clinic of the state rehabilitation commission; chairman of the American Red Cross; served on the staffs of the Hope Dell Hospital, Preakness, St. Joseph's Hospital and the Paterson General Hospital, where he died, March 13, of cirrhosis of the liver, aged 63.

James Willis Candee, Utica, N. Y.; New York Homeopathic Medical College, New York, 1879; member of the Medical Society of the State of New York; at one time secretary of the state board of homeopathic medical examiners; for eight years health commissioner of Syracuse; served as consulting physician at the Syracuse Homeopathic Hospital and trustee of the Syracuse Homeopathic Free Dispensary; for four years served as supervisor of the town of Forestport; aged 87; died, February 15, in the Masonic Soldiers and Sailors Memorial Hospital of chronic endocarditis and arteriosclerosis.

David Lawrence Satenstein, New York; Columbia University College of Physicians and Surgeons, New York, 1902; associate clinical professor of dermatology and syphilology at the New York Post-Graduate Medical School, Columbia University; specialist certified by the American Board of Dermatology and Syphilology; member of the American Dermatological Association; served on the staffs of the Jewish and Adelphi hospitals, Brooklyn and the Far Rockaway (N. Y.) Hospital; aged 63; died, February 25, in the New York Post-Graduate Medical School and Hospital of coronary thrombosis.

Bloxham Edward Alsobrook, Okeechobee, Fla.; Atlanta (Ga.) College of Physicians and Surgeons, 1910; formerly associated with the Indian Service; local surgeon for the Florida East Coast and Seaboard Air Line railways; aged 62; died, February 13, in the Arcadia (Fla.) General Hospital of uremia.

James McAllister Anderson, St. Petersburg, Fla.; Western Pennsylvania Medical College, Pittsburgh, 1902; member of the Florida Medical Association; at one time on the staffs of the Western Pennsylvania and Pittsburgh hospitals, Pittsburgh; on the staffs of the Mound Park and St. Anthony's Hospital; aged 69; died, February 7, of myocarditis.

Albert George Aschauer, Springfield, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1909; member of the Illinois State Medical Society; served during World War I; aged 63; died, March 6, in St. John's Hospital of pyloric ulcer.

John Henry Ash, Quincy, Mass.; Harvard Medical School, Boston, 1895; member of the Massachusetts Medical Society; for many years a medical examiner for the Metropolitan Life Insurance Company; formerly the city school committeeman; served as a trustee of the Thomas Crane Public Library and as city physician; served on the staff of the Quincy City Hospital; aged 72; died, February 15, of chronic myocarditis.

John Anthony Badgley, Joliet, Ill.; Rush Medical College, Chicago, 1880; member of the Illinois State Medical Society; in 1938 received a fifty year medal from the state medical society; formerly medical director of the DeKalb (Ill.) County Tuberculosis Sanatorium; aged 87; died, February 20, in St. Joseph's Hospital of pneumonia.

Louis Bagby ✠ Vinita, Okla.; University Medical College of Kansas City, Mo., 1900; past president and secretary of the Craig County Medical Society; served on the staff of the Vinita Hospital; president of the First National Bank; aged 67; died, February 15, of coronary thrombosis.

Frank Gould Bryant, Scranton, Pa.; College of Physicians and Surgeons, Baltimore, 1895; served as fire and police surgeon of Scranton; medical inspector for the school district for fifteen years; at one time director of public health in Scranton; aged 70; died, February 28, of carcinoma of the prostate.

James Adam Carnes ✠ Navarre, Ohio; University of Pennsylvania Department of Medicine, Philadelphia, 1907; fellow of the American College of Surgeons; served on the surgical staffs of the Massillon (Ohio) City Hospital and the Aultman Hospital, Canton; chief surgeon of the Central Alloy Division of the Republic Steel Corporation of Canton and Massillon; aged 57; died, February 13, of coronary occlusion.

Edward J. Carney, Durand, Mich.; Rush Medical College, Chicago, 1901; member of the Michigan State Medical Society; past president of the Shiawassee County Medical Society; for many years city health officer; past president of the chamber of commerce; served as president of the village of Durand; member of the staff of the Durand Hospital, where he died, February 15, of coronary thrombosis, aged 68.

Edward Francis Carroll, Riverside, R. I.; Harvard Medical School, Boston, 1894; served as postmaster, member of the school committee and the city police commission of Providence; aged 71; died, February 15, of heart disease.

Walter Marion Caton, Mason City, Ill.; Kansas City (Mo.) Medical College, 1901; University of Kansas School of Medicine, Kansas City, Kan., 1909; member of the Illinois State Medical Society; formerly on the staff of the Lincoln (Ill.) State School and Colony; aged 70; died, February 16, in Lincoln of coronary thrombosis.

John Wesley Cunningham, Eldersville, Pa.; Memphis (Tenn.) Hospital Medical College, 1906; member of the Medical Society of the State of Pennsylvania; served as a major

in the medical corps of the U. S. Army during World War I; aged 72; died, February 5, in the Ohio Valley Hospital, Steubenville, Ohio, of carcinoma of the tongue with metastasis.

Charles Webster Didenhover, Baltimore; University of Maryland School of Medicine, Baltimore, 1894; at one time police coroner for the northern district; aged 70; died, February 14, in the Union Memorial Hospital of cerebral hemorrhage.

Mary Hughes Elliott ✠ Spencer, W. Va.; National University of Arts and Sciences Medical Department, St. Louis, 1914; Bennett Medical College, Medical Department of Loyola University, Chicago, 1916; served overseas during World War I; aged 62; served on the staffs of the Larned (Kan.) State Hospital and the Spencer State Hospital, where she died, February 25, of coronary occlusion.

Harry Fleming Fisher, Braddock, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1892; member of the Medical Society of the State of Pennsylvania; on the staff of the Braddock General Hospital; aged 73; died, February 9, of coronary thrombosis.

Asbury Coke Graves, Pittsburg, Kan.; University of Nashville (Tenn.) Medical Department, 1882; Vanderbilt University School of Medicine, Nashville, Tenn., 1883; formerly mayor of Pittsburg; at one time a member of the House of Representatives of Kansas; served on the staff of the Mount Carmel Hospital; a consulting eye surgeon to the Kansas City Southern Railway; aged 86; died, February 13, of cerebral hemorrhage.

Charles Burley Ham, Toledo, Ohio; Bellevue Hospital Medical College, New York, 1889; aged 82; died, February 26, of cerebral hemorrhage.

William Stephen Hamlett, Baird, Texas; Kentucky School of Medical, Louisville, 1898; aged 81; died, February 12, in the Callahan County Hospital following an operation for urinary retention caused by prostatic disease.

Martin Passmore Hamrick, Olive, Calif.; University of Pennsylvania School of Medicine, Philadelphia, 1911; served during World War I; formerly a captain in the medical corps of the U. S. Army; on the resident staff of the Riverside (Calif.) County Hospital; aged 57; died, February 15, in the Veterans Administration Facility, West Los Angeles, of cerebral hemorrhage.

William McIntire Harsha, Chicago; Chicago Medical College, 1883; member of the Illinois State Medical Society; in 1905 member of the House of Delegates of the American Medical Association; professor of surgery emeritus at the University of Illinois College of Medicine; a founder and fellow of the American College of Surgeons; president of the Chicago Surgical Society, 1916-1917; emeritus member of the Institute of Medicine of Chicago; formerly surgeon to St. Luke's Hospital; aged 87; died, February 26, of uremia.

William Anthony Herman, New York; Georgetown University School of Medicine, Washington, D. C., 1930; served as a member of the staffs of the Roosevelt and Doctors hospitals; aged 41; died, February 17, in the Lenox Hill Hospital of pneumonia.

Joseph Ellis Hoffman, Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1883; aged 88; died, February 16, of cerebral hemorrhage.

Henry G. Hughes, Schenectady, N. Y.; University of the City of New York Medical Department, New York, 1890; member of the Medical Society of the State of New York; past president of the Schenectady County Medical Society; formerly served as physician and surgeon for the Holland American Steamship Line, Panama Railroad Steamship Line and as chief surgeon of the Guayaquil and Quito Railroad Company of Ecuador, South America; aged 75; died, February 17, of coronary disease.

George W. Kehl ✠ Reading, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1893; in 1910 president of the Berks County Medical Society; fellow of the American College of Surgeons; for many years chief surgeon of the Reading Hospital, where he later became a consulting surgeon; aged 71; died, February 10, of bronchogenic carcinoma.

Charles Henry Krause, St. Louis; Homeopathic Medical College of Missouri, St. Louis, 1893; vice president and treasurer of the Columbia Quarry Company; aged 69; died, February 8, in St. Anthony's Hospital of heart disease.

Louis Lefrak ✠ New York; Long Island College Hospital, Brooklyn, 1908; specialist certified by the American Board of Radiology, Inc.; member of the Radiological Society of North America, Inc., and the American College of Radiology; clinical assistant 1921-1922 and instructor 1923-1924, department of roentgenology, New York Post-Graduate Medical School and Hospital; aged 68; died, February 21, of heart disease, following a prostatectomy.

Edward Joseph Leonard ✠ Boston; Georgetown University School of Medicine, Washington, D. C., 1926; instructor in medicine at the Tufts College Medical School; aged 41; on the staffs of St. Margaret's Hospital and the Carney Hospital, where he died, February 14, of coronary thrombosis.

Van Buren Martin, Picayune, Miss.; Medical Department of Tulane University of Louisiana, New Orleans, 1898; member of the Mississippi State Medical Association; examining physician for the Selective Service System for local draft board number 1 of Pearl County; formerly bank director; superintendent and owner of a sanatorium bearing his name; aged 75; died, February 27, in the Touro Infirmary, New Orleans, of heart disease.

Floyd Napoleon Moore, Austin, Texas; Baylor University College of Medicine, Dallas, 1928; member of the State Medical Association of Texas and the American College of Chest Physicians; medical director of the Austin-Travis County Sanatorium; member of the Austin Junior Chamber of Commerce; aged 44; died, February 25, of coronary thrombosis.

Marion W. Murphy ✠ Ringgold, Ga.; Atlanta Medical College, 1892; president of the Bank of Ringgold; aged 81; died, February 25, of coronary occlusion.

Samuel Gaines Northrup, Houston, Texas; Medical Department of Tulane University of Louisiana, New Orleans, 1888; aged 81; died, February 20, of heart disease.

Clell Ping, Summersville, Ky.; St. Louis College of Physicians and Surgeons, 1923; member of the Kentucky State Medical Association; aged 43; died, February 23, of cerebral hemorrhage.

Marion Pinson, Meta, Ky.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1892; at one time a school teacher; aged 83; died, February 26, in Zebulon of cerebral hemorrhage.

John D. Poe ✠ St. Louis; St. Louis University School of Medicine, 1903; served on the staffs of the Evangelical Deaconess Home and Hospital and St. John's Hospital; aged 68; died, February 26, in Miami, Fla., of pneumonia.

Henry Jacob Pool ✠ Port Clinton, Ohio; University of Wooster Medical Department, Cleveland, 1902; fellow of the American College of Surgeons; member of the Radiological Society of North America, Inc.; aged 67; died, February 17, of cardiorenal vascular disease.

Michael Thomas Reynolds ✠ Brooklyn; Columbia University College of Physicians and Surgeons, New York, 1901; fellow of the American College of Surgeons; served on the staffs of the Mary Immaculate Hospital, Jamaica, N. Y., and St. Mary's Hospital; aged 64; died, February 27, in St. Vincent's Hospital, New York, following an operation on the gallbladder.

Henry Towne Safford, El Paso, Texas; Starling Medical College, Columbus, 1896; member of the State Medical Association of Texas and the American Society of Anesthetists, Inc.; in 1942 was elected the first honorary member of the Texas State Association of Medical Anesthetists; aged 75; member of the executive committee of the Providence Hospital, where he died, February 18, of heart disease.

Elmer Emmett Sherman, Keosauqua, Iowa; College of Physicians and Surgeons, Keokuk, 1898; member of the Iowa State Medical Society; aged 81; died, February 12, in the Iowa Methodist Hospital, Des Moines, of chronic heart disease.

Neulan B. Smith, Ellisville, Miss.; Medical Department of Tulane University of Louisiana, New Orleans, 1894; while a resident of Laurel served as a member of the board of aldermen of the city and as a member of the board of trustees of the city schools; aged 72; died, February 22, of heart disease.

Henry Smoyer, North Tonawanda, N. Y.; Niagara University Medical Department, Buffalo, 1895; member of the Medical Society of the State of New York; on the staff of the De Graff Memorial Hospital; served as mayor, city treasurer and school physician; for ten years town health officer of Wheatfield; aged 72; died, February 18, of aortic stenosis and arteriosclerosis.

John Willis, Wanamassa, N. J.; University and Bellevue Hospital Medical College, New York, 1907; served during World War I; formerly chief anesthetist at the Christ Hospital and on the staff of the Jersey City Hospital, Jersey City; served for two years as school physician at the Ocean Township; aged 64; died, February 17, of cerebral hemorrhage.

Correspondence

INTELLECTUAL WORKERS AND PHYSICAL EXERCISE

To the Editor:—A little belatedly I wish to compliment you on the editorial "Intellectual Workers and Physical Exercise," which appeared in the February 13 issue of THE JOURNAL. The point of view expressed seems particularly desirable at this time when so many of our university departments of physical education are being asked to take over the activity aspects of the military program. I hope a good many men in my profession read it and profit from the thought involved. We here at the Ohio State University are proceeding rather carefully to the fulfilment of our obligations in this connection, and we desire most earnestly to fit the program of physical education for men in uniform rationally and appropriately into their preparation. We are taking the position that it is not our business to devise a program of exercises which will "toughen" these men in any extraordinary fashion, but on the contrary we hope to emphasize a high quality of instruction in useful motor skills and to devise a program which will be as far as possible based on the capacity of the soldier or sailor to receive such physical education as his age and physical condition permits without jeopardizing his ability to profit most from his other responsibilities while on the campus.

It has been my observation that intensive calisthenic or conditioning exercises are not altogether suitable but in their place may be used sound instruction in certain military skills, such as swimming, and a wise selection of games and sports which will have some purpose and interest involved therein and which will at the same time provide a desirable psychologic preparation in the use of initiative and resourcefulness in combat situations.

It is particularly gratifying to us, therefore, to note how closely we agree with what I gather to be the basic view expressed in this editorial.

D. OBERTEUFFER, Columbus, Ohio.
Professor of Physical Education, Ohio State University.

"ANDROGENS AND TESTICULAR IRRADIATION IN CANCER OF THE PROSTATE"

To the Editor:—The communication of Huggins entitled "Androgens and Testicular Irradiation in Cancer of the Prostate" (THE JOURNAL, January 9, p. 147), seems to me to be misleading. He states that my quotation "The theorem of possible relationship of some factor in the testicle, probably androgenic, to carcinoma of the prostate was promulgated by me eight years ago . . ." (THE JOURNAL, Dec. 5, 1942, p. 1120) refers apparently to an oral promulgation rather than to a publication, since no reference to it could be found among my publications cited in the *Quarterly Cumulative Index Medicus* before 1941.

Before the then Southwestern Branch of the American Urological Association, at the meeting held in St. Louis on Oct. 22, 23 and 24, 1934, in the discussion of a paper by Dr. Robert C. Cone of Galveston, Texas, entitled "Prostatic Carcinoma with Complications," the theorem of possible relationship between carcinoma of the prostate and testicular hormones was presented and the course of 2 cases recited in which planned irradiation had been given with 650 kilovolts potential in castration dosage to the testicles during the years 1933 and 1934. The scientific proceedings of this meeting were not published.

Referring to my paper read before the American Urological Association in May 1941 (*J. Urol.* **46**:1007 [Nov.] 1941), it is set forth that the cases reported were from "the five year period immediately ending in December 1938," and, further, it is stated that at the time of the report "the longest time of survival is seven years." It takes no great amount of mental gymnastics to deduce that the five year period began in 1933 and that the patient surviving longest had his treatment in 1934. Coincidentally, in the series of cases presented by Huggins on the same program in 1941 the clinical effects of surgical castration were observed over a period of only twenty months (*J. Urol.* **46**:997 [Nov.] 1941).

The concept of a possible hormonal relationship to carcinoma of the prostate enunciated by me in 1934 was well known to a number of urologists, who evinced a decided interest in the theorem.

I would not detract from the excellent corollary work done by Dr. Huggins in pursuit of the proof of this concept, and to Dr. Huggins must go priority in publication of this proof.

Pertinent to the article by Huggins entitled "Effect of Orchiectomy and Irradiation on Carcinoma of the Prostate" (*Ann. Surg.* **115**:1192 [June] 1942), he concludes "Roentgen irradiation of the testes in the doses stated . . . is inadequate as a therapeutic agent in human prostatic cancer." In support of this conclusion he cites the 2 patients "in whom roentgen therapy was applied to both the pelvis and testes." A careful review of the histories of both cases reveals that in neither case was roentgen therapy applied directly to the testes as a planned therapeutic procedure. Further, the illustration (fig. 8) depicting the microscopic appearance does not carry the same case number as either of the cases cited. And the description "Histologic appearance of the testes eighty-seven days following completion of extensive irradiation with roentgen ray" does not conform to the described procedure in the case reports. There is no expression or knowledge purveyed of any given amount of x-ray absorption; rather, this factor is entirely assumptive.

Until Dr. Huggins will conduct a parallel series of roentgen and surgical castration cases, he is not in a position to pronounce a negative dictum relative to planned testicular irradiation.

As Huggins states (p. 1192), "Thus, it is clear that there are many failures in the treatment of prostatic carcinoma by orchiectomy," so it can be said of irradiation castration that there will be a comparative mortality the first year but the late failures, both mortality and morbidity, are not so manifest.

The contention that interstitial cells are not affected by irradiation is open to question, and whether the interstitial cells are responsible for the carcinogenic related factor is also conjectural. It is irrefutable, however, that this factor in the testicle is sufficiently depressed by roentgen therapy to establish its adequacy as a potent therapeutic agent in human prostatic cancer.

ARBOR D. MUNGER, M.D., Lincoln, Neb.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

BOARDS OF MEDICAL EXAMINERS
BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of boards of medical examiners and boards of examiners in the basic sciences were published in THE JOURNAL, April 10, page 1241.

NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS: *Parts I and II*, August 2-4. *Part III*, June and also at various times at various centers having 5 or more eligible applicants. Sec., Dr. J. S. Rodman, 225 S. 15th St., Philadelphia.

EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF DERMATOLOGY AND SYPHILOLOGY: *Written*, Philadelphia, Sept. 27. *Oral*, Philadelphia, Nov. 5-6. Final date for filing application is August 16. Sec., Dr. C. Guy Lane, 416 Marlboro St., Boston.

AMERICAN BOARD OF OPHTHALMOLOGY: *Parts I and II*. New York City, June 4-5, October 8-9. Sec., Dr. John Green, 6830 Waterman Ave., St. Louis.

AMERICAN BOARD OF PEDIATRICS: *Written*. Locally, Oct. 8. *Oral*, New York, Nov. 20-21. Final date for filing application is Aug. 1. Starting July 1, 1943, Group I will be abolished. Sec., Dr. C. A. Aldrich, 707 Fullerton Ave., Chicago.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Accident Insurance: Death from Coronary Occlusion Precipitated by Strain of Dancing Not Due to "Accidental Means."—The insured, an able bodied man of 55, about once every two weeks was wont to dance, at a meeting of a dancing club to which he belonged, continuously for approximately three hours. During the latter part of the evening of Dec. 21, 1940, at a meeting of the club and while the insured was dancing a fast fox trot, he complained to his partner of a pain in his left side and shoulder and he was forced to cease dancing. His son took him to a hospital immediately but the insured died as they arrived at the hospital. According to the attending physician, death resulted from a coronary occlusion or blood clot, which means, so the physician stated, "a blocking of the arterial blood vessels." Specifically, this physician testified:

> It must have been a thrombosis or a thromba formed at the entrance to the coronary artery and the violent exercise of dancing increased the flow of blood and forced the clot that had formed there into the coronary artery and produced a complete block.

Suit was instituted on a policy of insurance that provided stated benefits for loss of life "from bodily injuries sustained . . . through purely Accidental Means . . . independently and exclusively of disease and all other causes." From an adverse judgment, the insurance carrier appealed to the Supreme Court of Washington.

The court was called on to determine whether or not death resulted from bodily injuries sustained through purely accidental means and whether or not the bodily injuries which caused death were sustained through accidental means independently and exclusively of disease. If the answer to either question was no, there could be no recovery on the policy of insurance. To support recovery the claimants, apparently the widow and son of the insured, cited a number of cases decided by the Supreme Court of Washington in which recovery had been allowed against insurers for injuries allegedly caused by accidental means. The court, however, did not find any of its previous decisions precisely in point in the present controversy. An examination of those cases, said the court, demonstrates that an unusual unforeseen agency or happening was present and unexpectedly caused the injury which brought about death in each of those cases and brought the facts within the provisions of the policy of insurance sued on. The rule stated in those cases is that generally death will be regarded as resulting from accidental means when it arises from an unanticipated event which happens as by chance or which does not take place according to the usual course of things. We adhere to that rule but we cannot extend that rule to include all injuries which may be caused to holders of accident insurance. In the present case, the insured was doing an ordinary and customary act in his usual way and no unexpected event interposed itself to cause injury. The dance was described as a fast fox trot. That dance, so far as the facts indicate, was no different from any other modern lively dance and called for no violent action other than that which was incident to the activity of dancing and was readily foreseeable by the insured. The insured's death was not caused by an unexpected event which happened by chance. True, death is in most instances unexpected, but to hold that all unexpected deaths are accidental and that insurance companies which insure against accidental death are liable on that ground alone would amount to a rewriting of such policies by the courts and put into each of those policies an intent that was never conceived by either the company or the insured at the time the policies were written. That the courts cannot do. Courts may only determine the legal effect of contracts. The judgment against the insurance company was accordingly reversed.—*Hodges v. Mutual Ben. Health & Accident Ass'n of Omaha, 131 P. (2d) 937 (Wash., 1942).*

Venereal Prophylactics: Alleged Violation of Washington Act Forbidding Sale of Venereal Prophylactics at Wholesale or Retail Except by Licentiates of Board of Pharmacy.—A Washington statute (Rem. Rev. Stat., Sec. 10146-2, Laws, 1939, chap. 192, sec. 2) makes it unlawful for any person to sell any venereal prophylactic at wholesale or retail without having, respectively, a valid and subsisting wholesale dealer's or retail dealer's license issued by the state board of pharmacy. The defendant drug company was charged with violating this act by the sale at wholesale of two gross of prophylactics without possessing a wholesale dealer's license. The only evidence adduced to sustain the charge was the testimony of an inspector for the state board of pharmacy to the effect that he purchased two gross of prophylactics from the defendant drug company and that at the time of the purchase he was not a person who sold or intended to sell prophylactics directly to the user. From a judgment of conviction the defendant appealed to the superior court, King County, which affirmed the conviction. The defendant then appealed to the Supreme Court of Washington, challenging the sufficiency of the evidence to sustain the conviction.

The Supreme Court was of the opinion that the state failed to prove that the defendant drug company was guilty of the crime of selling prophylactics at wholesale. The statute, said the court, which the state charged the defendant with having violated defines the meaning of the term "wholesale." We may not go beyond the scope of that definition to determine the meaning of the word. "Wholesale," the statute provides, "shall mean a sale by a manufacturer, wholesale dealer, distributor or jobber to a person who sells, or intends to sell, direct to the user, and 'wholesale dealer' shall mean such a manufacturer, wholesale dealer, distributor or jobber" (Rem. Rev. Stat., Sec. 10146-1, Laws, 1939, chap. 192, sec. 1). The sale to the inspector for the state board of pharmacy was not a sale at wholesale within the meaning of that statute since the inspector did not sell or intend to sell direct to a user. It is not material at what price the prophylactics were sold by the defendant drug company, neither is the amount sold of any importance, as under the statute price does not, nor does the amount sold, determine the nature of the sale. Even if the defendant drug company made the sale to the inspector believing that the purchaser was buying the prophylactics for resale, that belief would not bring the defendant within the statute. We cannot, continued the court, follow the argument that, since the defendant drug company believed that the inspector was purchasing the prophylactics for resale, therefore, the defendant is guilty of the crime charged. An essential element of the crime charged is that the buyer of the prophylactics was a seller or intended to sell what he bought from the defendant drug company.

That element is lacking. Unless the buyer of the prophylactics from the defendant company was a person "who sells, or intends to sell, direct to the user, . . ." the transaction was not a sale at wholesale under the statute.

Holding that the state had failed to prove that the defendant company sold prophylactics at wholesale in violation of the statute, the Supreme Court reversed the judgment of conviction and remanded the cause with directions to dismiss.—*State v. Northwest Drug Co., Inc., 131 P. (2d) 956 (Wash., 1942).*

Society Proceedings

COMING MEETINGS

HOUSE OF DELEGATES OF THE AMERICAN MEDICAL ASSOCIATION, CHICAGO, BEGINNING JUNE 7. DR. OLIN WEST, 535 NORTH DEARBORN ST., CHICAGO, SECRETARY.

American Association of Genito-Urinary Surgeons, Stockbridge, Mass., June 10-12. Dr. Charles C. Higgins, 2020 East 93d St., Cleveland, Secretary.

American Association of Industrial Physicians and Surgeons, Rochester, N. Y., May 25-27. Dr. E. C. Holmblad, 28 East Jackson Blvd., Chicago, Managing Director.

American Association on Mental Deficiency, New York, May 12-15. Dr. Neil A. Dayton, Mansfield Training School, Mansfield Depot, Conn.

American College of Radiology, Chicago, June 6. Mr. Mac F. Cahal, 540 North Michigan Blvd., Chicago, Executive Secretary.

American Gynecological Society, Hershey, Pa., May 31-June 2. Dr. Howard C. Taylor Jr., 842 Park Ave., New York, Secretary.

American Neurological Association, New York, May 6-7. Dr. Henry A. Riley, 117 East 72d St., New York, Secretary.

American Ophthalmological Society, Hot Springs, Va., May [illegible]ne 2. Dr. Walter S. Atkinson, 129 Clinton St., Watertown, N. Y., Secretary.

American Psychiatric Association, Detroit, May 10-13. Dr. Winfred Overholser, St. Elizabeth's Hospital, Washington, D. C., Secretary.

American Psychoanalytic Association, Detroit, May 9-11. Dr. Leo H. Bartemeier, General Motors Bldg., Detroit, Secretary.

American Society of Clinical Pathologists, Chicago, June 4-6. Dr. Alfred S. Giordano, 531 North Main St., South Bend, Ind., Secretary.

American Surgical Association, Cincinnati, May 13-14. Dr. Warfield M. Firor, Johns Hopkins Hospital, Baltimore, Secretary.

Arizona State Medical Association, Tucson, April 30-May 1. Dr. Frank J. Milloy, 112 North Central Avenue, Phoenix, Secretary.

California Medical Association, Los Angeles, May 2-3. Dr. George H. Kress, 450 Sutter St., San Francisco, Secretary.

Connecticut State Medical Society, New Haven, May 25-27. Dr. Creighton Barker, 258 Church Street, New Haven, Secretary.

Georgia, Medical Association of, Atlanta, May 11-14. Dr. Edgar D. Shanks, 478 Peachtree St. N.E., Atlanta, Secretary.

Illinois State Medical Society, Chicago, May 18-20. Dr. Harold M. Camp, 224 South Main St., Monmouth, Secretary.

Iowa State Medical Society, Des Moines, April 29-30. Dr. Robert L. Parker, 3510 Sixth Avenue, Des Moines, Secretary.

Maryland, Medical and Chirurgical Faculty of, Baltimore, April 27-28. Dr. W. Houston Toulson, 1211 Cathedral St., Baltimore, Secretary.

Massachusetts Medical Society, Boston, May 24-26. Dr. Michael A. Tighe, 8 Fenway, Boston, Secretary.

Minnesota State Medical Association, Minneapolis, May 17-19. Dr. B. B. Souster, 493 Lowry Medical Arts Bldg., St. Paul, Secretary.

Mississippi State Medical Association, Jackson, May 11-13. Dr. T. M. Dye, Clarksdale, Secretary.

New Hampshire Medical Society, Manchester, May 11. Dr. Carleton R. Metcalf, 5 South State St., Concord, Secretary.

New Jersey, Medical Society of, Newark, May 25-26. Dr. Alfred Stahl, 55 Lincoln Park, Newark, Secretary.

New York, Medical Society of the State of, Buffalo, May 3-6. Dr. Peter Irving, 292 Madison Ave., New York, Secretary.

North Carolina, Medical Society of the State of, Raleigh, May 10-12. Dr. Roscoe D. McMillan, Red Springs, Secretary.

North Dakota State Medical Association, Bismarck, May 10-11. Dr. L. W. Larson, 221 Fifth Street, Bismarck, Secretary.

Oklahoma State Medical Association, Oklahoma City, May 11-12. Dr. Lewis J. Moorman, 210 Plaza Court Bldg., Oklahoma City, Secretary.

Rhode Island Medical Society, Providence, June 2-3. Dr. William P. Buffum, 122 Waterman St., Providence, Secretary.

West Virginia Medical Association, Charleston, May 17-18. Mr. Charles Lively, 1031 Quarrier St., Charleston, Executive Secretary.

CENTRAL SOCIETY FOR CLINICAL RESEARCH

Fifteenth Annual Meeting, held in Chicago, Nov. 6 and 7, 1942

The President, DR. ARLIE R. BARNES, Mayo Clinic, Rochester, Minn., Presiding

(Continued from page 1308)

Influence of Diet Deficient in the Vitamin B Complex on Work Output of Trained Subjects

DRS. E. E. FOLTZ, CLIFFORD J. BARBORKA and A. C. IVY, Chicago: Four medical students were provided with board and room in a hospital. The subjects came to the laboratory for a workout on the bicycle ergometer three times each week. The standard rate of work was 1,235 kilogrammeters per minute with a pedaling rate of 54 revolutions per minute. The subjects worked to complete fatigue, rested ten minutes, then worked to complete fatigue again. Double work periods were used because it was felt that the results obtained were more accurate than those resulting from single work periods. The subjects trained for from nine months to one year, during which time they were on a normal adequate diet. They then received a diet deficient in the vitamin B complex containing approximately 0.51 mg. of thiamine and 0.78 mg. of riboflavin a day. This diet was continued for two months, after which the fat content of each diet was reduced 50 per cent and an isocaloric amount of carbohydrate was added. This diet was continued three weeks. The subjects then received the original deficient diet supplemented with 25 Gm. daily of a yeast concentrate. This provided each subject with a daily intake of 15 mg. of thiamine, 5.25 mg. of riboflavin, 50 mg. of niacin, 5 mg. of pyridoxine and 25 mg. of pantothenic acid in addition to his deficient diet. Vitamin studies of the blood and urine were followed throughout the experiment.

All subjects showed decreased work output on deficient diets. When they were given the yeast concentrate a prompt increase in their total work output occurred. While the subjects were on deficient diets they at no time showed any objective evidences of a vitamin B deficiency with the exception of a slight increase in irritability. The blood levels of thiamine were normal throughout. However, the twenty-four hour urinary excretion of thiamine during this time varied from 5 to 35 micrograms. The subjects complained of lack of pep and of anorexia; leg pain occurred sooner during the work periods. The percentage of recovery was not significantly affected.

DISCUSSION

DR. EMMET B. BAY, Chicago: I should like to ask the authors if the blood pyruvate was the same after exercise as in the resting period. I understood that it did not vary on different diets. The figures shown would represent a great increase over what I understand to be the normal resting levels.

DR. E. E. FOLTZ, Chicago: The pyruvic acid values were those obtained following exhaustion. I did not have graphs showing them following rest.

Nutritional Deficiency and Resistance to Infection in Monkeys

DR. H. E. WILSON, S. SASLAW, PH.D., J. L. SCHWAB, PH.D., DR. O. C. WOOLPERT and DR. C. A. DOAN, Columbus, Ohio: Monkeys were isolated and divided into four diet groups: 1. Diet 1, vitamin B free basic diet consisting of sucrose, casein, vegetable oil, cod liver oil and salt mixture with the addition of thiamine hydrochloride, riboflavin, pyridoxine, nicotinic acid, calcium pantothenate and ascorbic acid. 2. Diet 2, all of the constituents of diet 1 with the addition of choline chloride, pimelic acid, glutamine, inositol and sodium paraminobenzoate. 3. Diet 600 (modified Goldberger), and 4, control diet consisting of the vitamin B free basic diet with the addition of ascorbic acid and crude liver extract administered parenterally. All 4 monkeys on the control diet thrived. All 32 in the other three groups showed progressive weight loss followed by lethargy, dryness of the coat and finally anorexia and weakness. Four monkeys on diet 600 showed a relatively rapid clinical decline and also exhibited extensive ulcerated oral lesions, which began to develop between the twenty-first and thirty-third diet days.

Minor degrees of transitory gingivitis appeared in about half the monkeys on diets 1 and 2 between the twenty-first and forty-fourth diet days, many of which lesions healed spontaneously.

All 32 animals in the three diet deficient groups exhibited an appreciable and progressive leukopenia, which appeared after six to eleven weeks in the monkeys on diet 600 and after four to fifteen weeks in those on diets 1 and 2. Significant degrees of anemia developed in less than half of these animals.

Eight of the nutritionally deficient animals were inoculated under light ether anesthesia with influenza virus type A. Five died in from two to eleven days. Influenza virus A was recovered from the lung filtrates of 3 animals. There were no deaths in 27 similarly inoculated monkeys on adequate diets.

Six animals while on the limited diets were inoculated with Streptococcus hemolyticus group C. Following inoculation an abortive ineffective, minimal leukocytosis was observed, in sharp contrast to the pronounced, sustained effective leukocytosis previously reported as developing in control monkeys on adequate diets. Of these 6, 3 developed facial erysipelas and 5 died with generalized septicemia seven to thirteen days after inoculation. Of 32 monkeys on normal diets receiving similar inoculations, 2 died with a streptococcic septicemia fifteen and twenty-one days afterward.

The humoral antibody responses to both streptococcus and virus did not differ essentially in time or titer in any of the groups from that observed in normal monkeys. Bone marrow studies have shown a relative and absolute hypoplasia in the myeloid elements in the infected monkeys dying with peripheral leukopenia.

Certain monkeys on diets 1 and 2, developing leukopenia and, given liver extract or yeast autolysate residue containing folic acid, showed hematologic and clinical recovery. Others, which had apparently progressed to an "irreversible phase," succumbed to spontaneous infection despite all resuscitative measures.

Of the 19 animals which were not experimentally infected while on the leukopenia producing diets 10 succumbed with spontaneous infections, 7 died with dysentery (Shigella paradysenteriae) between the eighty-fifth and one hundred and eightieth diet days and 1 died of Staphylococcus aureus septicemia, 1 of pneumonia due to Freidländer's bacillus and 1 with hemolytic streptococcus pneumonia.

Influence of Thiamine on Induced Hyperthyroidism

DR. RAY D. WILLIAMS and EDWARD C. KENDALL, PH.D., Rochester, Minn.: Two physically healthy women, maintained continuously on a basal diet providing only 0.22 mg. of thiamine per thousand calories but adequate in all other respects, received large doses of desiccated thyroid gland (subject 1, 0.6 Gm. a day; subject 2, 0.5 Gm. per day) for 241 days. Besides the periods of preliminary and subsequent observation the study was divided into three periods: thiamine hydrochloride was liberally provided during the first period of twenty-two days; it was restricted to 0.45 mg. a day during the second period of one hundred and thirty-six days; it was provided in increasing amounts during the third period of eighty-one days. The basal metabolic rates of the subjects rose to approximately + 25 per cent during the initial period of administration of thiamine and desiccated thyroid. The rates of the two subjects fell to levels as low as — 8 per cent and + 11 per cent respectively during the period of restriction of thiamine but they rose consistently to levels of + 25 and + 30 per cent respectively in the third period when thiamine was again provided. Throughout the period of administration of desiccated thyroid the concentrations of pyruvic acid and lactic acid in the blood after administration of dextrose were high, but they were higher during the period of restriction of thiamine.

The conclusion appears justified that the thyroid hormone is less effective in promoting metabolic activity of the organism in a state of thiamine deficiency than it is when the intake of thiamine is adequate. Data of this study may be interpreted as additional evidence that the function of the thyroid hormone is primarily to mobilize metabolites for oxidation by enzyme systems of the organism and only indirectly to increase the rate of oxidative processes. It might be inferred that deficiency of thiamine may be a contributory cause of low metabolic rates of unknown etiology. If low metabolic rates of a given subject were caused by deficiency of thiamine, it might be expected that a rise of metabolic rate would follow administration of thiamine. However, a rise of metabolic rate could occur only if the functional capacity of the thyroid gland was adequate. It is not improbable that thiamine deficiency of long standing induces as irreversible changes in the thyroid gland as in nervous structures. The gland may become exhausted from prolonged stimulation or atrophied from disuse.

Relationship of Estrogens to Certain Signs in Hepatic Diseases, Pregnancy and Vitamin B Complex Deficiency Syndromes

DR. WILLIAM BENNETT BEAN, Cincinnati: During the past five years a study has been made of the acquired arterial "spider" of the skin and a number of related phenomena which may occur during the course of diseases of the liver, pregnancy, and in persons with B complex deficiency syndromes as well as in certain apparently normal ones. Data have been accumulated on 251 cases which have been followed for weeks, months or years. Among the associated stigmas observed are palmar erythema, telangiectases of the nasal, oral and rectal mucous membrane, aneurysmal dilatations of the conjunctival vessels and vascularization of the skin of the nose. Seen less frequently were aberrations of menstrual function including amenorrhea, and after the menopause a return of irregular bleeding. Impotence, testicular atrophy and a transitory or permanent depilation of the pubic, axillary and thoracic hair were found in some males. These signs appeared in various combinations.

These observations attracted attention to the relation of estrogenic function and hepatic dysfunction to the vascular changes in the skin. A preliminary study of administering estrogenic 17-ketosteroids in cirrhosis in "remission" indicated that many of these manifestations might be related to a protracted increase of circulatory estrogens such as occurs in pregnancy and in chronic liver disease when these substances are not sufficiently destroyed, altered or excreted by the liver.

Points in the differential diagnosis of vascular "spiders" and the lesions of hereditary hemorrhagic telangiectasia (Osler's disease) include characteristic differences in gross morphology, histology, distribution, local intravascular pressure, bleeding tendency and the clinical course of the two distinct conditions.

These studies suggest that cutaneous arterial "spiders," palmar erythema and certain other phenomena which occur frequently in cirrhosis and pregnancy result from a prolonged action of estrogens.

DISCUSSION

DR. C. J. WATSON, Minneapolis: I should like to ask Dr. Bean if he has any explanation for the strict localization of these lesions to the upper part of the body. From my experience and what I have found in the literature they seem to be limited, as in Dr. Bean's cases, to the upper part of the body.

DR. PHILIP S. HENCH, Rochester, Minn.: Dr. Bean's statement that cutaneous arterial spiders and palmar erythemas occur frequently in cases of hepatic cirrhosis and in cases of pregnancy is of special interest to me because pregnancy and hepatitis with jaundice are two conditions which may promote a dramatic amelioration of rheumatoid arthritis. I have seen several cases of severe rheumatoid arthritis with a striking erythema of all the terminal phalanges and other cases with palmar erythema, the so-called liver palm. I have not seen vascular spiders in rheumatoid arthritis, but curious lines of telangiectasis across the lower anterior chest are often seen in patients with ankylosing spondylitis (and admittedly also in

certain "normal" persons). It is difficult to know what these observations signify. Do they suggest again that rheumatoid arthritis is somehow related to an abnormal hepatic or estrogenic function?

DR. ARMAND QUICK, Milwaukee: Do these tissues bleed more frequently than in true Osler's disease or hereditary telangiectasis?

DR. WILLIAM BENNETT BEAN, Cincinnati: Out of about 3,000 "spiders" I have seen 11 on the body below the umbilicus, 1 on the toe, a couple on the dorsum of the foot, 2 about the knee and others on the thigh and buttocks, so that the statement that they do not occur on the lower extremity is not true. Why the most usual distribution is in the upper portion of the body I do not know. I do not think there is a causal relationship to the drainage area of the superior vena cava, as suggested by Eppinger. I have seen palmar erythema in patients with the painful shoulder and hand syndrome following acute infarction of the heart. No one seems to know just what causes it. We know there may be a costal fringe of vessels in tuberculosis, but it may occur in the healthy too. Hemorrhage is almost a necessary factor in the diagnosis of hereditary hemorrhagic telangiectasia. It occurs in less than 5 per cent of vascular spiders, though it may happen readily if the lesions on the mucous membrane are rather large and superficial. In hereditary telangiectasia there is atrophy or loss of muscular coat of the artery, whereas in vascular spiders there is hypertrophy of the muscular coat of the artery with a good many "glomus" cells resembling the pericytes of Zimmermann. Vascular spiders are distinctly not arteriovenous shunts in the sense that a glomus is.

Causes of Drop of Plasma Vitamin A Level in Liver Disease

DR. HANS POPPER and FREDERICK STEIGMANN, Chicago: We compared the vitamin A concentration in the plasma with that of liver biopsy specimens chemically and by fluorescence microscopy in 76 cases (peptic ulcers, gallbladder disease with and without jaundice, carcinomas of the stomach, cirrhosis and biliary tract cancers). In addition the plasma vitamin A level in 24 nonsurgical cases of liver disease was determined. Plasma vitamin A levels of zero were found in almost all cases of cirrhosis with jaundice and in 66 per cent of the cases of secondary hepatitis due to malignant obstructive jaundice. Occasionally vitamin A levels of zero were also found in cirrhosis without jaundice, in cases of secondary hepatitis from incomplete obstruction and in cases of acute hepatitis. The average plasma vitamin A level was higher in cirrhoses without jaundice than in those with jaundice, and higher in obstructive jaundice without than with hepatitis. Although the hepatic vitamin A concentration showed similar tendencies, the variations were not always as definite. Often this resulted in great discrepancies between the low or zero vitamin A concentration in the plasma and the only slightly reduced vitamin A in the liver. In these cases the normal fluorescence microscopic distribution of vitamin A in the liver was much disturbed and this disturbed pattern suggested impaired release of vitamin A from the liver to the blood as the cause of the discrepancy mentioned. In rats intoxicated with carbon tetrachloride and then put on a vitamin A deficient diet the vitamin A is similarly found stored longer in the pathologic sites. Although faulty intestinal absorption of vitamin A is present in all types of liver disease (personal experiences in 52 cases confirmed older reports) it would not make itself felt in acute liver disease if the release of vitamin A from the liver was not impaired.

DISCUSSION

DR. G. E. WAKERLIN, Chicago: Epinephrine by injection and also ethyl alcohol by mouth have been shown to mobilize vitamin A from the normal liver. I think it would be interesting to study the effect of these two substances on the mobilization of vitamin A from the livers of patients with hepatic disease and from the livers of animals with experimental hepatic damage.

DR. HANS POPPER, Chicago: We consider the suggestion of Dr. Wakerlin as to the use of alcohol a good one in view of the results of Clausen and his collaborators, who find increased release of vitamin A from the liver after alcohol ingestion. Wald also found increased release after use of epinephrine. Our examinations of pathologic livers did not indicate the occurrence of an increased release of vitamin A. We will, however, accept the suggestion of Dr. Wakerlin and investigate the influence of alcohol on the blood vitamin A level of patients with liver disease.

Protective Value of Foods in Experimental Cirrhosis

DR. JESSE L. BOLLMAN, Rochester, Minn.: When extensive hepatic degeneration is produced in rats by repeated exposure to carbon tetrachloride the animals develop hypoprothrombinemia and die from hemorrhage into the gastrointestinal tract. In these experiments adult male rats were fed 20 Gm. daily of a basic diet containing 44 parts of lean meat, 44 parts of cracker meal, 8 parts of lard, 4 parts of salt mixture and vitamin supplement. With the uniform exposure to carbon tetrachloride vapor used in all experiments, these rats lived from thirty-two to forty-six days. In another group of experiments one half of this mixed diet was replaced with isocaloric values of carbohydrate (cracker meal and sucrose), protein (meat) and fat (lard). Considering the duration of life of the rats on the mixed diet as representing a protective value of the diet of 100, the following protective values were obtained: carbohydrate 146, protein 100 and fat 91. In another series three fourths of the mixed diet was replaced with isocaloric values of carbohydrate, protein and fat. With the protective value of the same mixed diet as 100, the following protective values were obtained: carbohydrate 205, protein 104 and fat 59. All the diets used were adequate to maintain normal animals.

The only organ that showed cellular degeneration other than that immediately associated with hemorrhage at the time of death during the carbon tetrachloride regimen was the liver. Examination of sections of the liver showed extensive necrosis, some regeneration and distortion of the architecture of the liver typical of cirrhosis. In animals studied at the time of death no definite differences in the extent of degeneration or cirrhotic changes in the liver were observed which could be ascribed to the different diets taken by the animals. Examination of sections of liver taken from animals at comparable periods of the carbon tetrachloride regimen showed evidence of the protective effects of the diets. The greatest amount of necrosis was present in the fat fed rats and the least in those fed carbohydrate. Regenerative changes were most evident in the animals receiving the protein diet.

DISCUSSION

DR. SAMUEL SOSKIN, Chicago: My associates and I have been doing some work similar to that of Dr. Bollman, except that we have been using more acute exposure to carbon tetrachloride. We do not wait until the animals die but examine them at various periods before death. Although our results are not yet complete, it looks as if they will agree with Dr. Bollman's in showing the protective action of carbohydrates. Most of Dr. Ravdin's results are based on the comparison of an intake of a superabundance of protein with a diet insufficient in protein. While we all know that a diet rich in protein would be beneficial to persons suffering from protein deficiency, this has little to do with the use of a superabundance of protein in hepatic disease. A more valid comparison is the use of a superabundance of a given foodstuff when the other elements of the diet are present in adequate amounts. In Dr. Bollman's work this comparison indicates the superiority of high carbohydrate intake as a life saving measure in carbon tetrachloride cirrhosis. Our results support his.

(To be continued)

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1932 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American J. Obstetrics and Gynecology, St. Louis

45:1-182 (Jan.) 1943. **Partial Index**

Application of New Classification of Toxemias of Pregnancy in 318 Fatal Cases. P. F. Williams and E. Weiss, Philadelphia.—p. 2.
Clinical Experiments in Relation to Excretion of Estrogens: III. Urinary Estrogens in Normal Menstrual Cycle and in Case of Essential Dysmenorrhea. O. W. Smith, G. V. S. Smith and Sara Schiller, Brookline, Mass.—p. 15.
Id.: IV. Effect of Veratrum Viride on Urinary Estrogens in Preeclampsia. O. W. Smith, G. V. S. Smith and A. G. Gauld, Brookline, Mass.—p. 23.
*Histologic Appearance of Endometrium During Lactation Amenorrhea and Its Relationship to Ovarian Function. P. Topkins, Brooklyn.—p. 48.
Krukenberg Tumor: Critique, with Report of Additional Four Cases, Including Smallest on Record. S. M. Copland and S. H. Colvin, New Orleans.—p. 59.
*Sulfanilamide and Sulfathiazole Therapy in Acute Salpingitis. D. N. Barrows and J. S. Labate, New York.—p. 82.
Missed Abortion: Analysis of Results Following Conservative Management. S. Lubin and R. Waltman, Brooklyn.—p. 89.
Treatment of Acute Inflammatory Pelvic Masses of Tubal Origin by Iontophoresis with Acetyl Beta Methyl Choline Chloride: Report of Ninety-Four Cases. R. L. Craig and H. Kraff, New York.—p. 96.
"Latzko" Extraperitoneal Cesarean Section: Report Based on Study of Twenty-Five Cases. H. C. Williamson and M. E. Goldblatt, New York.—p. 103.
Importance of Rest in Initiation of Breast Feeding. C. B. Darner and G. W. Hunter, Fargo, N. D.—p. 117.
Vitamin B in Heartburn of Pregnancy. B. F. Hart, Winter Park, Fla.—p. 120.
Addison's Disease Associated with Primary Amenorrhea: Case. E. H. Adler and S. B. Abrams, Cleveland.—p. 123.
Deaths from Perforation and Hemorrhage of Gastroduodenal Ulcer During Pregnancy and Puerperium: Review of Literature and Report of One Case. D. J. Sandweiss, H. M. Podolsky, H. C. Saltzstein and A. A. Farbman, Detroit.—p. 131.
Histidine Test (Kapeller-Adler) in Diagnosis of Pregnancy. M. J. Goodfriend and M. Daniel, New York.—p. 140.

Microscopic Appearance of Endometrium.—Among 145 endometrial biopsies done six to thirty-one weeks post partum of 28 normal lactating women during the period of lactation amenorrhea Topkins observed that 9 (6 per cent) showed progestational changes; all of these were associated with the onset of the first menstrual flow. Of the remaining 136 specimens 94 per cent showed estrogenic changes, and of these 20 were hypoplastic. During lactation the ovarian cycle is suppressed and its suppression results from suppression of the gonadotropic activity of the hypophysis. This has been shown by animal experimentation. The suppression of the pituitary gonadotropic activity in turn is due to the action of prolactin or to an internal secretion of the lactating mammary gland not as yet isolated.

Sulfanilamide and Sulfathiazole Therapy in Acute Salpingitis.—Barrows and Labate used sulfathiazole and sulfanilamide alternately in the treatment of 71 patients with initial attacks of acute salpingitis and 133 during an acute exacerbation of chronic salpingitis. Gonococcic endocervicitis and urethritis responded well to chemotherapy. All the positive spreads of patients became negative after treatment as judged by the reading of smears. The effectiveness of chemotherapy on gonorrheal lesions above the level of the internal os depends directly on the duration of the disease before therapy is begun and on the extent of tubal damage incurred. In 70 per cent of the patients with mild and 66 per cent of those with a moderate initial attack of less than five days complete resolution of adnexal masses was seen after one week of chemotherapy. There was no adequate response of primary salpingitis of a duration of more than five days and of recurrent salpingitis in the moderate or severe groups. Permanent damage of the tubes may be prevented or minimized if chemotherapy is started within five days of an initial attack of adnexal disease.

Journal of Lab. and Clinical Medicine, St. Louis

28:381-530 (Jan.) 1943

Role of Contemporary Medicine in Current War Effort. J. R. Darnall.—p. 383.
Army's Medical Field Service School and Its War Training of Medical Officers. E. E. Hume, Carlisle Barracks, Pa.—p. 388.
*Management of Thoracic War Injuries. J. H. Forsee, L. M. Shefts, B. Burbank, L. J. Fitzpatrick and T. H. Burford.—p. 418.
Wounds of Warfare. F. A. Coller and J. M. Farris, Ann Arbor, Mich.—p. 441.
Healing of Wounds. W. F. Bowers, Camp Gruber, Okla.—p. 451.
War Wounds and Anaerobes. R. I. Pritikin.—p. 462.
Newer Concepts in Treatment of Burns, with Suggestions for Management of Wartime Thermal Injuries. T. A. Fox.—p. 474.
Military Discipline: Problem in Readjustment. P. S. Madigan and M. J. Farrell.—p. 485.
War Neuroses. N. Q. Brill.—p. 489.
Id.: Experiences of 1914-1918: Lessons for Current Emergency. D. A. Thom, Boston.—p. 499.
"Shell Shock" and Effects of High Explosives. D. Denny-Brown, Boston.—p. 509.
Alcoholism in Military Service. M. Moore.—p. 515.
*Acute Respiratory Infection Resembling So-Called Acute Pneumonitis: Report of Forty Cases. L. B. Duggan and W. L. Powers.—p. 524.

Management of War Injuries to Thorax.—Forsee and his associates state that an equally mobile system of evacuation and treatment soon after injuries are incurred is necessary to reduce fatalities from thoracic war injuries. This entails properly equipped medical installations which can function at the point of maximal casualties close to the battle front. The more important problems that enter the management of thoracic injuries, and that the authors discuss, are the relation of the wound to the type of projectile, shock, hemorrhage, open pneumothorax, tension pneumothorax, interstitial pulmonary emphysema, massive collapse of the lung and contrecoup injury, "blast lung," ecchymotic mask, cardiac concussion, wounds of the heart and pericardium, cardiac resuscitation, acute and chronic empyema, foreign bodies, combined abdominothoracic wounds, chemotherapy and anesthesia. All these factors are considered by the authors. In thoracic injuries the abnormal thoracic physiology must be corrected immediately; that is, an open pneumothorax or sucking wound must be closed. Concurrent and later therapy must conform to the principles outlined in correcting the abnormal physiology. A tension pneumothorax must be relieved. The recognition of massive pulmonary collapse and treatment directed toward its reexpansion will greatly lessen the complications which frequently follow this condition. The anesthetic agents for extrapleural thoracic surgery are local (procaine hydrochloride), sodium pentothal, ether, nitrous oxide and oxygen with or without ether and cyclopropane. The anesthetics for intrapleural surgery are cyclopropane, nitrous oxide and oxygen, ether, sodium pentothal and spinal nupercaine (1:1,500). Nitrous oxide, oxygen and ether and sodium pentothal should be used as near the front as necessity requires. Properly employed endotracheal anesthesia will be highly successful in the management of many wounds of the chest. Likewise the greater use of cyclopropane is advisable.

Acute Respiratory Infection.—An acute infectious disease of the respiratory tract with unusual pathologic pulmonary changes in 40 patients is described by Duggan and Powers. The condition closely resembles the pneumonitis occurring in workers in the United States and abroad. The illness of most of the patients began as a simple acute infection with minimal respiratory and constitutional symptoms, a normal or slightly elevated leukocyte count and no abnormal physical signs. The diagnosis was usually roentgenographic and usually it could not have been made by any other means. The roentgenogram usually showed a small area of increased density most often located at the base or hilus of one lung. Abnormal physical signs in the lungs, manifested by crepitant rales, were not apparent until the peak of the severity of the disease had passed. Although the constitutional symptoms were not severe, convalescence was prolonged because of weakness. There is some evidence that the disease is caused by a filtrable virus. It is

apparently mildly contagious and is probably transmitted by casual contact. Lack of physical fitness, previous infections of the upper part of the respiratory tract, abnormal exposure or physical fatigue were not predisposing factors. The disease did not respond favorably to sulfonamide therapy. Many factors remain to be studied before the entire field of acute respiratory infections can be charted, and particularly is this true of those caused by a filtrable virus. The authors agree with Frances that this can be achieved only by clinical epidemiologic methods and that a comparison of the clinical differences in patients and epidemics with specific laboratory data will cause the various puzzling entities of respiratory disease to fall into their proper places.

Oklahoma State Medical Assn. Jour., Oklahoma City

36:1-46 (Jan.) 1943

Convulsions Encountered in General Practice. T. H. McCarley, McAlester.—p. 1.
Treatment of Burns. J. F. Burton, Oklahoma City.—p. 4.
*Patent Ductus Arteriosus: Report of Two Cases. F. T. Joyce, Chickasha.—p. 6.
Radiologist's Viewpoint in Treatment of Some Common Diseases. E. D. Greenberger, McAlester.—p. 12.

Patent Ductus Arteriosus.—Joyce cites 2 cases of patent ductus arteriosus; 1 illustrates what may happen in such a case in which the operation has not been performed and 1 is an unusual case of dwarfism in which the operation should be done. It seems safe to assume that the death of the first patient, a man of 31, was caused by a complication of the treatment for a bacterial endarteritis which in turn was a complication of the patent ductus arteriosus. Had ligation been done early in life the contributing cause of death would have been removed and it seems likely that he could have lived longer with the aortic coarctation as many patients do with more severe coarctation. Congestive heart failure may have been forestalled for some time. It is questionable whether the retarded physical development of the second patient, a girl of 6, was related to the patent ductus arteriosus, as her stature was of the type seen in pituitary dwarfism. She was referred to a well known clinic for ligation of the ductus, but the operation was not advised; the only reason given was that she should be observed for a time—now, almost a year. Regardless of the etiology of the dwarfism, which in itself will not shorten her life, the possibility that subacute bacterial endocarditis will develop sooner or later remains. Every sore throat and infection of the upper part of the respiratory tract constitutes an obvious invitation for its development in her present condition. The unfortunate aspect of the case is that the parents returned home firmly convinced that the operation will never have to be done.

Radiology, Syracuse, N. Y.

40:1-114 (Jan.) 1943

Bone Lesions in Acquired Syphilis. C. P. Truog, Detroit.—p. 1.
Diseases of Mediastinum and Associated Conditions: Refresher Course. L. W. Paul, Madison, Wis.—p. 10.
Post-Thoracoplasty Roentgenogram, with Special Reference to Posture. J. Gordon, Ray Brook, N. Y., and H. K. Taylor, New York.—p. 42.
Roentgen Analysis of Upper Cervical Spine Injuries. W. N. Palmquist, Richmond, Va.—p. 49.
Method for Localization of Foreign Bodies and New Instrument to Carry Out This Method. V. V. Bourke, Brooklyn.—p. 56.
Problem of Recovery from Radiation Effects. F. Ellinger, Brooklyn.—p. 62.
Multiple Casette Changer for Angiocardiography: Device for Rapid Serial Radiography. M. M. Schwarzschild, New York.—p. 72.

Tennessee State Medical Assn. Journal, Nashville

36:1-46 (Jan.) 1943

Prostatic Enlargement. J. C. Pennington, Nashville.—p. 1.
Special Ovarian Tumors: Report of Series of Cases. C. H. Long, Johnson City, and J. Ziskind, New Orleans.—p. 5.
Treatment of Burns by Use of Triple Dyes. C. C. Trabue, Nashville.—p. 13.
*Perforating Wounds of Abdomen. E. L. Rippy, Nashville.—p. 20.

Perforating Wounds of Abdomen.—Based on data from a study of 527 cases of penetration of the peritoneal cavity by either a bullet or a knife, Rippy declares that explorations should be carried out whenever the point of exit or entrance of the knife or bullet is in the region of the abdominal cavity. The mortality from perforations resulting from bullets was four times as high as when the perforation was the result of a knife blade. Hemorrhage is the greatest cause of shock; death will result unless hemorrhage is controlled and the blood volume is restored. In doubtful cases of injury to the peritoneum by the knife the wound should be examined in the emergency room and enlarged if necessary to ascertain its depth. If the blade has penetrated the fascia and muscle, further exploration is done in the operating room, under local anesthesia. The wound is enlarged and the muscle is retracted so that the peritoneum can be examined for evidence of injury. If the peritoneum has been penetrated, the patient is given a general anesthetic and exploration is done through the diagnostic incision or else a standard incision that will allow careful examination of the abdominal organs is made. The mortality and the fatality rate of patients with wounds caused by knives or bullets increase steadily with the time that elapses from injury to operation. As to the use of sulfonamides intraperitoneally, patients do better if a concentration between 10 and 12 mg. is maintained in the blood. The general average mortality for gunshot wounds for the nineteen years under consideration was 58.9 per cent, whereas for 1941 it was 31.9. The 12.5 per cent mortality for wounds caused by the knife was lower than in any other series reviewed.

Virginia Medical Monthly, Richmond

70:1-66 (Jan.) 1943

Symposium on the Sulfonamides. W. H. Higgins, interrogator, Richmond.—p. 3.
Basis for Physical Therapy in Acute Poliomyelitis. R. L. Bennett, Warm Springs, Ga.—p. 15.
Some Aspects of Cancer of Stomach. J. S. Horsley, Richmond.—p. 18.
Treatment of Burns, with Special Reference to Use of Sulfadiazine. J. G. Rennie, Pulaski.—p. 24.
Interrelationship of Dentistry and Otolaryngology. G. N. Thrift, Richmond.—p. 30.
Intravenous Anesthesia in Obstetrics. E. Rucker, Richmond.—p. 35.
Thrombosis of Cavernous Sinus: Report of Case. J. W. White, Norfolk.—p. 37.
*Gastroschisis: Case Report. D. E. Watkins, Waynesboro.—p. 42.
Radio in Public Health Education. D. Groom, Richmond.—p. 44.
Venereal Disease in Selective Service Rejectees. M. Romaine and W. E. Chapin, Petersburg.—p. 46.

Gastroschisis.—Watkins cites the case of an infant who has lived for five weeks (May 6, 1942) after repair of a gastroschisis. Gastroschisis is to be differentiated from abdominal hernia. In true gastroschisis the continuity of tissue in the abdominal wall, which permits direct communication between the abdominal cavity and the outside, is absent. The author attributes the success in his case to the fact that there was less disproportion than usual between the eventrated viscera and the abdominal cavity and that dehydration was combated early and frequently by giving isotonic solution of sodium chloride subcutaneously. Also the use of prostigmine seemed to stimulate intestinal peristalsis, after which the baby began to retain feedings. The abnormality was repaired early, that is before symptoms of shock and systemic effects had taken place. Further, sulfanilamide, used in the abdominal cavity, lessened the degree of peritonitis, as evidenced by the absence of wound infection.

Western J. Surg., Obst. & Gynecology, Portland, Ore.

51:1-34 (Jan.) 1943

Prefrontal Lobotomy in Mental Diseases: Case Report. P. G. Flothow and F. Lemere, Seattle.—p. 1.
Rational Use of Oral Estrogens in Menopause. S. J. Glass and G. Rosenblum, Los Angeles.—p. 4.
Abdominal Pain Simulating Acute Appendicitis Caused by Seminal Vesiculitis and Prostatitis. W. H. Snyder, Los Angeles.—p. 8.
Total Gastrectomy for Carcinoma: Report of Successful Case. J. H. Saint, Santa Barbara, Calif.—p. 10.
Abdominal Wound Suture: Use of Figure of Eight Steel Wire in Emergency Surgery. H. M. Nichols, Portland, Ore.—p. 17.
Perforated Peptic Ulcer. O. M. Nisbet, Portland, Ore.—p. 21.
Physiologic and Bacteriologic Factors in Wound Healing. W. Marshall, Appleton, Wis.—p. 24.

West Virginia Medical Journal, Charleston

39:37-68 (Feb.) 1943

Urologic Considerations in Pediatrics. M. F. Campbell, New York.—p. 37.
Management of Chronic Arthritis. J. G. Kuhns, Boston.—p. 44.
Recent Drug Developments. G. A. Bergy, Morgantown.—p. 52.
Report of the State Nutrition Committee. J. L. Blanton, Fairmont.—p. 56.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Annals of Rheumatic Diseases, London

3:77-144 (Dec.) 1942

Metabolism, Toxicity and Manner of Action of Gold Compounds Used in Treatment of Arthritis: III. Complete Excretion Studies and Comparison of Intravenous and Intramuscular Administration of Some Gold Salts. R. H. Freyberg, W. D. Block and S. Levey. —p. 77.
Resistance in Rheumatism. W. Hughes.—p. 89.
Cultural Studies on Rheumatoid Arthritis and Rheumatic Fever. D. M. Augevine, S. Rothbard and R. L. Cecil.—p. 101.
Report on Test of Mester's "Specific" Reaction in Rheumatic Cases. W. S. C. Copeman and W. Stewart.—p. 107.
*Five Hundred Cases of Myalgia in the British Army. M. Good.—p. 118.

Myalgia in the British Army.—Good discusses the 500 cases of myalgia that he saw in a main dressing station, several inspection rooms and a rheumatism ward of a military hospital. Most of the patients were successfully treated by injection of procaine hydrochloride. Myalgia of the leg or legs was the most frequent complaint; next in frequency was that of the hip, the dorsal and lumbar region, the neck, arm, shoulder, abdomen and chest. Study of the individual muscles involved shows that the quadratus lumborum and trapezius were most frequently affected, the tensor fasciae latae, glutei, semimembranosus tendinosus and sacrospinalis. Myalgia of the triceps, the adductors and extensors (except lateral vastus of the leg) was not encountered. The reason for the frequency of myalgia of certain muscles is suggested by Bramwell, who states that muscles which are of special importance as fixators in relation to maintenance of posture are predisposed. The primary cause (or causes) of rheumatic myalgias is not known. In 22.6 per cent of the 500 cases myalgia was traced to a recent or previous injury. In the discussion of the pathology of myalgia the conception of a diminished blood supply in the myalgic area is tentatively put forward. This would lead to oxygen want—local hypoxemia or hypoxia—which would account for the pain, paresthesia and loss of power, the symptoms of myalgia. A rapid, effective and permanent cure can be obtained by intramuscular injection into the myalgic spots of 1 to 2 cc. of a solution made up of 1 Gm. of procaine hydrochloride, 0.5 Gm. of phenol and enough saline solution to make 100 cc. The result of a thorough and accurate injection is almost instantaneous relief of pain, relaxation of the spastic muscle and the absence of pain from pressure on the myalgic spot. The reaction of a patient with genuine myalgia to pressure on the myalgic spot is immediate pain and a single jerk of a part of his body.

British Journal of Dermatology and Syphilis, London

54:313-344 (Dec.) 1942

Dermatitis Due to Tyroglyphus Longior Gervais, Variety Castellani Hirst, in Cheese Dust. D. W. P. Thomas.—p. 313.
Dermatitis from Exposure to Tear Gas. J. T. Ingram.—p. 319.

British Medical Journal, London

1:1-30 (Jan. 2) 1943

Three Years of Military Psychiatry in the United Kingdom. J. R. Rees.—p. 1.
Observations on Injuries to Semilunar Cartilages in Service Patients. S. A. S. Malkin.—p. 6.
Mitral Systolic Murmurs. W. Evans.—p. 8.
*Treatment of Chronic Ulcerative Colitis by Pneumoperitoneum. H. Neumann.—p. 9.
Some Observations on Biliary Pain. A. A. Douglas.—p. 10.

Treatment of Chronic Ulcerative Colitis by Pneumoperitoneum.—Neumann has obtained excellent results in chronic, apparently intractable, cases of colitis by the establishment and maintenance over several months of a therapeutic pneumoperitoneum. The patient is not confined to bed except for a few days, and his hospitalization can be limited to a short time. The clinical indications for pneumoperitoneum were chronicity, diarrhea, pus, mucus and blood in stools and intractability. Refilling can be done once or twice a week; when pure oxygen is used the intervals are three or four days because absorption is more rapid. When air is used the intervals are six to eight days. Oxygen, because of its calming effect, is preferable for the first fillings for patients with major abdominal discomfort and frequent colic and for those with a higher grade of secondary anemia and dyspnea. The number of fillings varies greatly; it may be necessary to continue treatment for three months or more. Only 1 of the author's 7 patients was treated for more than three months. The therapeutic action of pneumoperitoneum is probably partly due to activation of the visceral peritoneum and to "tuning it to a higher pitch" by the setting up of a permanent bland irritation to the peritoneal surface and partly to the mechanical action and the indirect influence on the autonomic nervous system. Pneumoperitoneum is free enough from danger for it to be performed by any practitioner, even without the facilities of a clinic or a hospital.

Lancet, London

1:35-64 (Jan. 9) 1943

*Sulfonamide Resistance in Gonorrhea. J. Petro.—p. 35.
Defects of Smell After Head Injury. A. D. Leigh.—p. 38.
Motility of Fasting Stomach in Health and Disease. W. F. Anderson. —p. 40.
Carcinoma of Testis Presenting as an Acute Condition Within the Abdomen. H. Jayne and E. Jarrett.—p. 43.
*Deficiency Anemias of Malnutrition. H. C. Trowell.—p. 43.
Dangers of Pentothal Sodium Anesthesia. A. R. Hunter.—p. 46.

Sulfonamide Resistance in Gonorrhea.—Petro bases his definitions and observations on 956 cases of acute gonorrhea in naval ratings treated with sulfapyridine or sulfathiazole. Sulfonamide resistance in gonorrhea may be acquired, relative and absolute. An in vivo and an in vitro investigation of 44 cases of male gonorrhea shows that 5 resistant strains and 1 relatively resistant strain of gonococci were responsible for the failure of 6 patients to respond to adequate sulfonamide treatment. Investigation of the female hosts of one sulfonamide resistant strain of gonococci supported the view that such a strain can be transmitted from one host to another. The development of resistant strains is probably favored by inadequate doses of a sulfonamide, haphazard tests of cure and the premature cessation of treatment in defaulters. Until new compounds effective against sulfonamide resistant strains are evolved or means for resensitizing these strains are found, treatment of patients infected with a sulfonamide resistant organism must be by irrigation or artificial fever.

Deficiency Anemias of Malnutrition.—Trowell reviews the knowledge of nutritional macrocytic anemia, a common anemia in both sexes when the diet is deficient in extrinsic factor. The failure to recognize this anemia, and its refractoriness to many forms of liver in the form and dosage found potent in pernicious anemia, might cause confusion with achrestic anemia, acholuric jaundice of the acquired variety, and refractory and aplastic anemia. When iron deficiency anemia and nutritional macrocytic anemia are both present the resulting anemia presents a confused picture difficult to recognize. The term dimorphic anemia should be given to this combination. This may well be the most common deficiency anemia of the very poor; and the very poor are not confined to the tropics. Two deficiencies play a part in the etiology of dimorphic anemia. The blood smear shows dimorphism between the central and the peripheral parts of the smear, the sternal puncture reveals two deficiency types of erythropoiesis and two factors are necessary in its treatment: iron and liver.

Practitioner, London

150:1-64 (Jan.) 1943

Acute Tonsillitis: Diagnosis, Treatment and Complications. V. E. Negus.—p. 1.
Tracheotomy and Laryngotomy. N. Patterson.—p. 7.
Common Causes of Hoarseness and Its Treatment. R. D. Owen. —p. 13.
Modern Methods of Diagnosis and Treatment of Diphtheria. W. M. Elliott.—p. 23.
Common Causes of Stridor in Infancy and Their Treatment. J. V. Braithwaite.—p. 31.
Hysterical Amnesia in Soldiers and Some Medicolegal Implications. W. L. Neustatter.—p. 35.
Chronic Bronchitis in the Aged. T. H. Howell.—p. 40.
Some Anal and Rectal Conditions. R. H. Franklin.—p. 42.
Note on Treatment of Chronic Arthritis with Calcium Aurothiomalate. M. B. Ray.—p. 49.
Psychology in General Practice: I. Introduction; Attitude of General Practitioner. M. Culpin.—p. 51.

Tubercle, London

23:239-262 (Nov.) 1942

Closed Suction Drainage of Tuberculosis Cavities. T. H. Sellors. —p. 239.

Presse Médicale, Paris

50:169-192 (Feb. 18-21) 1942

Some Points on the Histophysiology of Nerve Trunks of Interest to Surgeons (Remarks on an Article by René Leriche). A. Policard.—p. 169.

*New Remarks on the Remedy to Apply to the Grave Deficiency of the Present Diet in Phosphorus, Calcium and Vitamin D and the Urgency of This Remedy. H. and M. Hinglais.—p. 171.

Postoperative Acute Digestive Dilatation: Disturbance of Digestive Permeability. P. Suire.—p. 173.

Deficiency of Present Diet in Phosphorus, Calcium and Vitamin D.—H. and M. Hinglais say that a year ago, on Feb. 18, 1941, they placed in the hands of the rationing committee a memorandum on the extraordinary impoverishment of the present diet in calcium, phosphorus and vitamin D, pointing out that the deficiency is enormous in all subjects over 6 years old. They also called attention to the prevailing misconception that vitamin D by itself can be of value in the absence of sufficient amounts of phosphate and calcium in the diet. This "factor of utilization" can never be substituted for the essential building and maintenance materials phosphorus and calcium. A plan of correcting the diet which was compatible with the present possibilities and realizable on a large scale in groups and families was presented by the authors, but, no attempt having been made to put it into practice, they repeat that the deficiency in phosphorus and calcium reduces the resistance and burdens most heavily the future of the young generation. In one graph they show the calcium deficit for the different age groups and in another one the vitamin D deficit. The calcium and phosphorus deficits are comparatively slight in children up to 6 years old, but after that they grow because the ration becomes smaller as the need increases. Children between 6 and 10 years receive less than half, those between 12 and 14 less than a third and after 14 less than a tenth of their requirements. In pregnant and nursing women the deficiency is likewise considerable. This great deficiency in phosphorus and calcium is due to the total or almost total disappearance of milk and its products from the diet. Other foods are extremely low in calcium and phosphate. The systematic employment of calcium phosphate associated with a suitable dose of vitamin D constitutes the only available remedy to compensate for the lack of milk. It must be made a part of the daily diet. A table lists the required daily doses of phosphorus, calcium and vitamin D for the different age groups. The urgency of the problem of supplying particularly school children and young people with adequate amounts of phosphorus, calcium and vitamin D is proved by the increasing frequency of fractures of the neck of the femur in young adults, by the increase in rickets and in osseous and dental decalcifications.

Archivos Argentinos de Pediatría, Buenos Aires

18:99-191 (Aug.) 1942

Syndrome of Guillain-Barré in Childhood: Case. A. Casaubón and A. Puglisi.—p. 99.

Late Evolution of Apparent Obstetric Abdominal Hemiparalysis. E. Gaing, D. Aguilar Giraldes and A. J. Alurralde.—p. 105.

Case of Congenital Malformation of Intestinal Tract. E. Halac and J. J. Halac.—p. 110.

Favorable Development of Child Now Aged 10, Who During Lactation had Malignant Lymphogranuloma. P. R. Cervini, A. Di Bartolo and H. Weber.—p. 121.

Phylactic Transfusion: Its Concept and Application in Pediatrics. V. Anello.—p. 133.

*Chronic Coryzas and Vitamins. A. Vidal Freyre.—p. 142.

Chronic Coryzas and Vitamins.—The frequent observation of children who "always have a cold" and whose coryza does not respond to the various local treatments induced Vidal Freyre to try the nasal instillation of vitaminized oils. He used a vitamin A preparation. Five drops were instilled three times a day into each nasal fossa. The results were quite favorable. The treatment was completely successful in 18 of 41 cases, there was considerable improvement in 8 cases, moderate improvement was obtained in 8 and the treatment failed in 7 cases. The favorable effect can probably be explained by the protective action of vitamin A on the epithelium. It can be employed pure or in combination with small doses of vitamin D. Before treating a chronic rhinitis it is of course essential to determine the cause, for it would be ridiculous to try to cure a diphtherial coryza with instillations of vitamin A. Syphilis and tuberculosis should be investigated, because these diseases may sustain focal infection. Spasmodic rhinitis or nasal asthma is another type of chronic coryza. Tonsillar hypertrophy and adenoid vegetations produce obstruction and favor and maintain all types of catarrhs of the upper respiratory passages. Their early extirpation is advisable. Disregarding these cases as well as the syphilitic coryzas, there still remains a large number of children with chronic nasal catarrh. For these the author recommends the local application of vitamin A.

Arch. Urug. de Med., Cir. y Especialid., Montevideo

21:101-232 (Aug.) 1942. **Partial Index**

*New Sulfonamide Preparations in Therapy of Bacillary Dysentery. F. Abente Haedo and A. Rodríguez Devincenzi.—p. 115.

*Genital Brucellosis in Man. P. Purriel, R. Risso, and J. Espasandín. —p. 128.

Sulfonamide Compounds in Bacillary Dysentery.—Abente Haedo and Rodríguez Devincenzi report good results from sulfonamide preparations in 16 cases of bacillary dysentery. In all the diagnosis was confirmed by laboratory tests which showed bacilli of Flexner's group in the feces. The group included children and adults. The authors emphasize the importance of early diagnosis and early sulfonamide therapy. The first dose of the drug (sulfathiazole) should be large (2 or 4 Gm. for adults and 0.75 or 1 Gm. for children). The daily dose for adults is 1 Gm. every four hours day and night without any interruption until recovery, which as a rule occurs within two or three days. The total daily dose for children who weigh less than 10 Kg. varies between 0.15 and 0.4 Gm. for each kilogram of body weight. The total dose is divided in six equal fractional doses, each of which is administered every four hours. In children weighing more than 20 Kg. the first and daily doses for each kilogram of body weight are smaller than those given to children under 20 Kg. of body weight. The first dose of sulfaguanidine both for adults and for children is 0.1 Gm. for each kilogram of body weight; the following dose is 0.05 Gm. for each kilogram of body weight every four hours day and night for the first two days and the same dose every eight hours for two more days. During and after treatment the patients should drink liquids freely. If good results are not manifested during the first week of the treatment it should be discontinued. In no case is the drug given for more than two weeks. Ascorbic and nicotinic acids, thiamine hydrochloride, vitamin A and liver extract should be administered in the course of the treatment. The patients should be carefully observed for the possible appearance of adrenal insufficiency, which is a serious complication and calls for immediate proper therapy.

Genital Brucellosis in Men.—Puerriel and his collaborators report 6 cases of acute or chronic brucella epididymitis without orchitis in workers in refrigerator meat plants. The acute form of the disease began with symptoms of general infection and fever in the course of which acute funicular, scrotal and testicular pain either local or irradiating to one or the four limbs appeared. Acute inflammation of one testis appeared early in the disease. It was found by palpation that the testis was of normal form and consistency whereas the epididymis was the seat of acute inflammation, which was more acute at the head and tail of the structure than at the body. Subacute vaginitis with effusion, subacute prostatitis and vesiculitis existed in some cases. The chronic form of the disease appeared in patients who complained about asthenia of long duration or about repeated attacks of moderate fever. The genital symptoms were more or less mild. They appeared in course of one of the attacks of recurrent fever. The chronic genital disease was either unilateral or bilateral. Small painless nodules could be palpated in both testes. The biologic tests for Brucella (intradermal test for allergy and seroagglutination test) were strongly positive in all cases and remained positive throughout illness and convalescence. Therapy during the acute period and the recurrences consisted of rest, local heat and sulfanilamide.

Book Notices

Laboratory Directions in Biochemistry. By Victor C. Myers, M.A., Ph.D., D.Sc., Professor of Biochemistry, Western Reserve University, Cleveland. Paper. Price, $3.50. Pp. 288, with 17 illustrations. St. Louis: C. V. Mosby Company, 1942.

Biochemistry has been recognized as an important subject in the medical curriculum for many years and, more recently, detailed work in this subject has been given in schools of dentistry. The present loose leaf manual of directions for laboratory work for a course of biochemistry in medical schools and in dental schools will be viewed with interest by many teachers of biochemistry. The author states that the directions were prepared originally for his students at the Albany Medical College in 1910. The original manual has been revised each year, and today the directions for laboratory work in biochemistry are thoroughly in keeping with newer developments of the subject. The directions for experiments are divided into sections on introductory biochemistry and clinical biochemistry and a course in practical laboratory work for dental students. An outline of the plan of lectures and laboratory work as presented at Western Reserve University is provided so that the suggested laboratory work may be easily correlated with other schedules of subject presentation. The introductory section deals with the biochemistry of carbohydrates, lipids, proteins, tissues, digestion and excretion. The clinical portion contains chapters on gastric analysis, the examination of duodenal contents, the chemistry of feces and the examination of the urine for clinical purposes and an extended section on the chemical analysis of blood. The laboratory program for dental students is somewhat shorter. In place of exercises on clinical biochemistry, attention is devoted to the analysis of saliva and the quantitative aspects of biochemistry and, because some students may not have had sufficient training in this subject, the author includes in the appendix a discussion of visual and photoelectric colorimeters and a series of experiments for students who have not completed a course in quantitative analysis. The manual is well written and suitably illustrated, and it should be generally useful.

The Art of Living in Wartime. By Marjorie Barstow Greenbie. Cloth. Price, $2.50. Pp. 266. New York & London: Whittlesey House, McGraw-Hill Book Company, Inc., 1943.

The title of this delightful book might well have been simply "The Art of Living." Its wartime angles are distinctly timely and helpful, but its value will not be limited to wartime except to those who in the peace to come may be prevented from reading it by its title. It is a sound, sane, solid, helpful book, but it is much more. It gives the impression of growing out of a living experience in which life's problems have been faced with serenity and success. It manages to be inspiring without striving for effect and it achieves dignity without pomposity. The chapter titles are ingenious. Typical among them are "The Gallant Art of Facing It," "The Heroic Art of Overtime," "The Difficult Art of Taking It Easy," "The Discarded Art of Filial Piety," "The Fundamental Art of Love," "The Lusty Art of Keeping Fit" and "The Thankless Art of Doing One's Bit." In style and general approach it is reminiscent of David Grayson's "Adventures in Contentment" and similar writings keyed to a more tranquil age. It is packed with hope, courage, humor and helpfulness at a time when nothing is needed more. This is a book that will give the reader a lift. It should be especially good reading for persons whose maladjustments to wartime living threaten to have unfavorable repercussions on their emotional and eventually their physical and mental health. To any such patient the physician need not hesitate to recommend it.

The Vitamins in Medicine. By Franklin Bicknell, D.M., M.R.C.P., and Frederick Prescott, M.Sc., Ph.D., A.I.C., Clinical Research Director, The Wellcome Foundation, London. Cloth. Price, 45s. Pp. 662, with 121 illustrations. London: William Heinemann Medical Books, Ltd., 1942.

This book is intended as a comprehensive survey of the vitamins with emphasis on the clinical aspect of the subject. The contents include chapters on vitamin A, vitamin B complex and its known factors, and vitamins C, D, E, F, K and P. Each vitamin is considered from the point of view of history, physiology, sources and food tables, effects of cooking, storage, human requirements in health and disease, clinical and biochemical methods of detecting deficiencies and conditions in which it has been used clinically.

Unfortunately, in an attempt to make the compilation complete these authors have included references to reports that are in need of considerable supporting evidence. In certain sections emphasis seems to be placed on a summary of experimental work rather than proved clinical facts as the title of the book suggests. Some readers will accept such references as an invitation for vitamin therapy in instances in which their use is not justified. Probably this must be expected in books that are intended as comprehensive surveys.

If this book is read for provocative thought, much satisfaction will result. If it is used entirely as a guide for vitamin therapy in general practice, occasional disappointment may result. However, the contents of the book are well arranged and well indexed and cannot help but leave the reader acutely aware of vitamin deficiencies. Bibliographies at the end of each chapter contain the titles of over three thousand papers and supplement the value of the book as a reference and therapeutic guide.

Manual for Managers of Rural and Other Small School Lunchrooms. Prepared and published by the Ohio Dietetic Association with the co-operation of the following agencies: Ohio State Department of Health, Ohio Department of Education, Division of Vocational Education, Ohio State University, School of Home Economics, Division of Institutional Management, Works Progress Administration, Committee from the Ohio Home Economics Association, Cleveland Health Council. Paper. Price, $1.50. Pp. 226. Cleveland: Ohio Dietetic Association, 1942.

This is an eminently practical manual in loose leaf form for managers of rural and other small lunchrooms. It has been prepared by a committee of the Ohio Dietetic Association with the cooperation of a number of health agencies. The greater part of the book is devoted to recipes for a large number of nourishing dishes. The ingredients are listed for serving twelve, twenty-five or fifty persons. Each recipe takes up one page. The method of preparation is described clearly, and at the bottom of the page there are menu suggestions showing the way in which the particular preparation may be used in a meal. The authors have not neglected to include an adequate index. The first part of the book contains discussions of such subjects as the educational possibilities of the school lunchroom, what a satisfactory lunch should consist of and how to select it. There is an interesting section on quantity cookery with a list of reference books appended. A chapter on equipment with numerous charts of arrangements of lunchroom and kitchen enhances the usefulness of the volume. Chapters on food purchasing, food cost accounting and food sanitation are also included.

Tobacco and Health: Some Facts About Smoking. By Arthur H. Steinhaus, Professor of Physiology, George Williams College, and Florence M. Grunderman, Assistant in Biological Science, George Williams College. Third edition. Paper. Price, 35 cents. Pp. 48. New York: Association Press, 1942.

This is a summary on effects of tobacco in relation to health, based on the theory that the average citizen given all the facts ought to be capable of making up his mind, especially if he is told how the facts are developed. Following this theory the authors have taken the various phases of tobacco smoking and have set down what they conceive to be the facts for and against the use of tobacco in various forms. Typical of their approach is the handling of the question of smokers versus nonsmokers in athletics. In this section, which constitutes chapter VII of the brief monograph, they deal with performance in cross country runs by heavy smokers, moderate smokers, nonsmokers and the totals. These are all in favor of the nonsmokers. With respect to sprints they indicate that there is no difference between the performance of smokers and nonsmokers. In swimmers nonsmokers have the advantage. Then follows the physiologic explanation and the conclusion that "Smoking does 'cut the wind' of an athlete." Most chapters are followed by questions which lead to further discussion. There is an extensive bibliography, and every statement in the brief summary is documented according to the bibliography. This should be a useful teaching instrument.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

VACCINES AND TUBERCULOSIS

To the Editor:—**Has any vaccine been developed which would be suitable for vaccination against tuberculosis? If an effective vaccine has been developed, I should appreciate your giving me the technic and materials used.**

Herman I. Pifer, M.D., Winchester, Va.

ANSWER.—Many vaccines have been developed for tuberculosis, but few have survived the experimental trials. Koch's old tuberculin was intended originally as a vaccine, but the huge doses frequently caused disaster to tuberculous patients. A long list of nonviable vaccines have been recommended, but the details are irrelevant. Pondorf, von Ruck, Deycke and many more less well publicized products came and have gone, with a large number of experimental varieties. Of the "living" vaccines (made of living bacilli) including Friedmann's, Selter's, Raw's and Calmette's, only the latter is still used. Calmette's BCG (named Bacillus Calmette-Guérin after the authors) is an avirulent bovine type of tubercle bacillus isolated twenty-five years ago and grown on biliated potato medium since. It has been used extensively in Europe and South America, but only a few in North America have given it an adequate trial, and the trials here have been largely experimental. Among those who have studied it here are Park, Watson, Ferguson, Aronson and Rosenthal.

There has been a heated controversy over the possible value of BCG. One group, consisting of Myers and Stewart, feels that sensitization is prone to lead to more "destructive" action on the tissues on reinfection, and that primary infections are more benign and to be preferred. Furthermore, they reason that it is better to try to prevent infection by removal of contacts and better quarantine rather than attempt to build a dubious immunity. On the other hand, most experimental evidence supports the thesis that vaccination protects relatively against a later reinfection, that it isn't always possible to prevent tuberculous infection and that removal of contacts should be done first, but that when it is not possible, as in poor districts or in those exposed to tuberculosis, the vaccine will be a protection. They reason further that if one healed infection protects against a reinfection why shouldn't an avirulent and harmless bacillus as BCG be given to confer the protection rather than risk a virulent infection which may come at an inopportune time and place and may result in disease?

The vaccine BCG was originally made by the Pasteur Institute, Paris, under Calmette's direction, but it is not possible to get it from that source now. The manufacture of the vaccine is done only under the most stringent precautions to prevent a repetition of the now famous "Lübeck disaster" in Lübeck, Germany, where over 70 infants died because a virulent tubercle bacillus had accidentally contaminated the vaccine. The culture is grown on Sauton's medium and biliated glycerin potato medium. The bacilli are taken up from Sauton's medium, washed, weighed, diluted and administered either by mouth, by subcutaneous injection or by the multiple puncture method of Rosenthal. The minute details of preparation, preservation, prevention of contamination and use had better be obtained from one of those using the vaccine, such as Aronson of the Henry Phipps Institute, Philadelphia, Rosenthal of the Municipal Tuberculosis Sanitarium, Chicago, or Watson of the Dominion government, Ottawa, Canada.

Park, W. H.; Kereszturi, Camille, and Mishulow, Lucy: Effect of Vaccination with BCG on Children from Tuberculous Families, THE JOURNAL, Nov. 18, 1933, p. 1619.

Watson, E. A.: Studies on Bacillus Calmette-Guérin (BCG) and Vaccination Against Tuberculosis, *Canad. J. Research* **9:** 128 (Aug.) 1933.

Ferguson, R. G.: Activities in Provincewide Program for Control of Tuberculosis, *Canad. Pub. Health J.* **26:** 130 (March) 1935.

Aronson, J. D., and Dannenberg, A. M.: Effect of Vaccination with BCG on Tuberculosis in Infancy and in Childhood, *Am. J. Dis. Child.* **50:** 1117 (Nov.) 1935.

Rosenthal, S. R.: Studies with BCG: The Present Method of BCG Cultivation and Vaccine Production as Practiced at the Pasteur Institute and the Tice Laboratories, *Am. Rev. Tuberc.* **35:** 678 (May) 1937.

Myers, J. A.: Tuberculosis Among Children and Young Adults, ed. 2, Springfield, Ill., and Baltimore, Charles C Thomas, 1938, chapter IX, p. 126.

Stewart, C. A.: Does a Primary Tuberculous Infection Afford Adequate Protection Against Consumption? THE JOURNAL, April 8, 1933, p. 1077.

Rosenthal, S. R.: The Multiple Puncture Method of BCG Vaccination, *Am. Rev. Tuberc.* **39:** 128 (Jan.) 1939.

Lübeck Catastrophe: General Review, *Brit. M. J.* **1:** 986, 1931.

HEMOPTYSIS AND METASTATIC ABSCESS WITHOUT RIB FRACTURE

To the Editor:—**A civilian employee at this post was driving a small "Chisel" truck when the wheels hit a beam, causing the steering wheel to spin violently to the left. The force of this spin was communicated directly to his left hand and thence to his shoulder and back by reason of his effort to stop the motion with his extended arm. As a direct result of this forceful wrenching of his shoulder and back muscles he suffered immediate severe excruciating pain, especially over the infraspinatus and the teres major, as well as the posterior axillary muscles. There was a definite paresthesia down to the left wrist. We thought at first that he was a malingerer. Two days subsequently the man developed a temperature of 102 F., the pain remained and motion of the entire arm was considerably limited. There was hemoptysis on two occasions. After eight days there was some evidence of fluctuation over the scapula inferior to the spine. Paresthesia had disappeared and the temperature was still fluctuating. An incision was made over the fluctuating area and a large amount of dark brown purulent material was evacuated. The cavity was found to extend below the scapula, where the ribs formed a part of its wall. Culture of the material revealed nonhemolytic streptococci to be the causative organism. Repeated roentgenograms of the ribs and scapula were negative. 1. What was the source of the hemoptysis forty-eight hours after the injury with negative lung findings? 2. Was the abscess caused by the breaking down of a subcutaneous hematoma or was it entirely hematogenous without relationship to the injury? 3. How could the possibility of the development of such a condition be anticipated so as to avoid charging the patient with malingering?**

M.D., New Jersey.

ANSWER.—This is an interesting case, and it is difficult to answer the questions posed with assurance.

1. With regard to the hemoptysis without rib fractures and negative lung findings, it can only be surmised that the shock of the injury caused a minor damage to the finer bronchioles with a minute amount of hemorrhage.

2. The abscess seems definitely in the class of metastatic abscesses (see Christopher, Frederick; Minor Surgery, ed. 4, Philadelphia, W. B. Saunders Company, 1940, pages 2 and 3, for three illustrative cases). A metastatic abscess presupposes an injury plus a distant focus of infection. It may be a boil or possibly even a throat infection (see also Sante, L. R.: *Ann. Surg.* **89:***772* [May] 1920).

3. It would seem wise to avoid the charge of malingering until a week or more has gone by in any case of injury. When it is definitely suspected, psychiatric aid is often of great benefit.

DERMATITIS AND VENOUS STASIS

To the Editor:—**Is an underlying (subjacent) phlebitis the cause of stasis dermatitis? This question is ignored in all textbooks.**

T. S. Saunders, M.D., Portland, Ore.

ANSWER.—Stasis dermatitis, often called varicose eczema, is not necessarily of uniform causation. It is most commonly seen in conjunction with severe stasis in the superficial venous system, whereas it is infrequently encountered after deep venous obstruction. It is practically never seen in patients with an acute phlebitis but it is true that chronic or even latent types of phlebitis, manifesting painful, thickened saphenous veins, seem to be associated with stasis dermatitis. That venous stasis with consequent high capillary pressure and increased capillary permeability is an important factor is best shown by the fact that putting the patient to bed with elevated lower extremities or bandaging the leg with an elastic bandage often produces improvement.

This, however, is only part of the difficulty. Patients suffering from such dermatitis often have sensitive skins and may have hay fever or are sensitive to foods. Often the dermatitis may have started locally, over an inflamed vein, but becomes generalized, probably after scratching or rubbing the antigen into the systemic circulation. Then again there may be a ringworm infection between the toes acting as the origin of skin allergy. Much effort may have to be expended to track down the origin of such cutaneous allergies. Certain it is that venous stasis accentuates and helps to localize such skin reactions, but venous stasis alone does not account for the allergic manifestations and the great resistance to treatment, which should be directed equally toward the elimination of stasis and allergens of the most varied sorts.

EROSIONS AND ULCERATIONS OF CERVIX

To the Editor:—There have been various references in the literature to the iodine test for cervical carcinoma. Normal cervical mucous membrane is supposed to take a brown stain because of the glycogen, while tissue that remains white is supposed to be cancerous or precancerous. I have routinely painted the cervix with 3.5 per cent iodine in the cases I have had in the last few months. In most cases there is a sharply outlined area 1 to 4 cm. in diameter that does not take the iodine stain. This area is usually larger but never smaller than any cervical "erosion." That is, an ulcerated cervix or the columnar epithelium that lines the cervix does not seem to take the stain. The area which is outside the erosion which fails to take the iodine stain often appears otherwise to be healthy epithelium. Does this finding have any clinical significance? Certainly they are not all "precancerous"; biopsies of eroded or roughened areas showed no demonstrable change except three. One was reported as leukoplasia grade 1, one leukoplasia with precancerous changes, and the third as adenocarcinoma. I should like to know the significance of the pink so-called erosion that is often seen surrounding the cervical os that increases and decreases in size with the menstrual cycle. It is often seen "in women who have no history of pregnancy or cervical disease."

M.D., Arizona.

ANSWER.—Persistence of a white unstained appearance on application of Gram's iodine solution is not diagnostic of cancer but is merely suggestive of areas which may merit biopsy study. Erosions, ulcerations and various leukoplakic, i. e. "white patches," all fail to take the iodine stain. It is therefore evident that the Schiller test really has only limited application.

An erosion is customarily defined as a reddened or congested area on the vaginal surface of the cervix covered by a layer of columnar epithelium. Most teachers of gynecology take exception to the assumption that these areas are "ulcerated." Notwithstanding the accepted definition of an erosion, study of these lesions reveals that a large percentage are actually devoid of an epithelial covering; the surface is often composed of granulation tissue infiltrated with polymorphonuclear leukocytes and extensively invaded by bacteria. Erosions present a salmon red or pink appearance. There may be only a small area surrounding the external os, or the greater portion of the vaginal surface of the cervix may be involved. The anterior cervical lip is particularly subject to this lesion.

PREGNANCY AND DIABETES—CESAREAN SECTION

To the Editor:—I should like to know the present status of endocrine treatment in pregnancy for a person with diabetes. I should also like to know whether it is the present consensus that severe diabetes constitutes an indication for cesarean section, especially for early cesarean section, with a view to lowering fetal mortality. References on both of these points would be appreciated.

William F. Putnam, M.D., Lyme, N. H.

ANSWER.—There is a certain amount of disagreement concerning the management of the pregnant patient with diabetes. This concerns the viability of the fetus rather than the mother, for whom all groups expect survival almost equal to that of nondiabetic mothers. As for the fetus, one group of workers maintains that adequate obstetric and diabetic care of the mother favors fetal survival and that nothing further is indicated. Others who also treat many diabetic patients think this is not the case, because, even with adequate diabetic and obstetric care, the fetal survival is still below 80 per cent. In one experience, based on 125 cases, the obstetric diabetic patients may be divided into two groups, according to their normal or abnormal hormonal pattern. If this is normal, the clinical course and the fetal survival approach that of nondiabetic pregnancies, but when it is abnormal the outcome is definitely otherwise.

Among 41 patients of the normal hormonal type the fetal survival was 95 per cent, which is comparable with that of nondiabetic fetal survivals. Among 27 patients in whom the pattern was abnormal and untreated the fetal survival was 61 per cent. Four of the ten deaths were stillbirths and six were neonatal (within twenty-four hours of delivery). Diabetic care was adequate in all.

The mother's clinical picture associated with the imbalance was either premature delivery or the development of preeclamptic toxemia which was mild, so far as the mother was concerned, but carried with it a high fetal mortality.

For the 57 patients with abnormal hormonal patterns for whom attempts were made through estrogen and progestin therapy to restore the hormonal balance to normal, the fetal survival has been comparable to that of the normal hormonal pattern, 91 per cent.

Among these patients, weekly determinations for chorionic gonadotropin and pregnandiol are employed to anticipate premature delivery and preeclamptic toxemia. If the chorionic gonadotropin rises or the pregnandiol falls, standard endocrine therapy is used. Usually intramuscular injections of diethylstilbestrol, an average dose being 15 mg. daily, and intramuscular injections of progesterone, the equivalent of 10 mg. daily, are given. Treatment is adjusted according to the hormone levels.

If laboratory facilities are not available, threatened premature deliveries should be treated with progesterone 10 to 50 mg. If the patient is gaining weight rapidly and develops edema, hypertension or albuminuria, estrogen and progestin therapy may be employed; namely, diethylstilbestrol 15 mg. and proluton 10 mg. intramuscularly. The dosage may be adjusted by symptoms.

For patients with abnormal hormonal balance even under treatment or with clinical signs of toxemia a premature delivery is indicated, and the time which has been selected is in the thirty-seventh week. Whether delivery should be by cesarean section or otherwise must be determined by conference between obstetrician and internist in each individual case. There is no absolute rule. Breech presentations, hydramnios and gigantism are clinical indications for cesarean section. Multiparous patients, those whose infants appear small and whose clinical course has been normal are candidates for normal delivery.

Although the infant of the diabetic mother appears postmature, its behavior is that characteristic of prematurity. Oxygen incubation, heat and postponement of feeding for twenty-four hours are routine in the writer's clinic. Dextrose is not believed to be indicated unless the blood sugar is still falling at the end of eight hours. It may be employed in 5 per cent solution.

Inhalation anesthesia at delivery and premedication are used in only minimal amounts.

HEMOLYTIC ESCHERICHIA COLI IN FECES AND VACCINE THERAPY

To the Editor:—Would you be kind enough to let me know the present status of hemolytic Escherichia coli from feces as a pathogen in various diseases? I have in mind an article by Niles and Torrey published some years ago on this subject. What is the present prevalent opinion with regard to the therapeutic value of treatment with vaccines prepared from such strains of organisms?

Jacob Levine, M.D., Winston-Salem, N. C.

ANSWER.—Hemolytic strains of Escherichia coli are commonly found in the feces of healthy persons. There is no proof that these strains give rise to a toxemia in simple colitis (irritable colon), ulcerative colitis, urticaria, angioneurotic edema, acne, acne rosacea, eczema, pruritus, fibrositis and pyelitis, which is the list of conditions treated by Niles and Torrey (Niles, Walter L., and Torrey, John C.: The Clinical Significance of B. Coli Hemolyticus, *Am. J. M. Sc.* **187**:30 [Jan.] 1934). Vaccines are not widely used at the present time in treating these diseases, and any benefit derived from them is probably nonspecific.

SNAKES AND DESERT LIFE OF SOUTHWESTERN UNITED STATES

To the Editor:—I am interested in any information regarding the types of animal life, especially snakes, to be found in the desert at Indio, Calif.

A. Abrams, Major, M. C., A. U. S.

ANSWER.—Gayle B. Pickwell's book Deserts (New York, Whittlesey House, McGraw-Hill Company, 1939) is undoubtedly the best recent account of the desert life of southwestern United States. There is no good account of desert snakes as such, but the Field Book of Snakes of the United States and Canada by K. P. Schmidt and D. D. Davis (New York, G. P. Putnam's Sons, 1941) should be helpful. What Snake Is That? by Roger Conant and William Bridges (New York, D. Appleton-Century Company, 1939) is less technical.

SEBACEOUS CYSTS OF CHIN

To the Editor:—In Queries and Minor Notes in The Journal, Feb. 13, 1943, for treatment of a patient with "many small sebaceous cysts about her chin incident to acne," you advised roentgen therapy, eight to ten treatments at weekly intervals, with a dosage of 75 to 80 roentgens, unfiltered, and stated that most cases of this type will respond to this form of treatment. The prescription, as given, is not properly descriptive, as the quality (voltage) is not specified nor the focal distance. Aside from that, I cannot conceive of any sebaceous cyst responding to such therapy, except for a temporary improvement; to cure a sebaceous cyst secondary to acne or to a blackhead, the wall of the cyst must be destroyed or removed and this is accomplished by surgery. Roentgen therapy is very beneficial in pustular acne, with which cystic acne is often associated: too frequently repeated x-ray treatments, given for cystic acne, will result in permanent skin damage, so that the patient will have the cysts plus a damaged atrophic skin. In twenty years of experience, I have not seen a single sebaceous cyst cured by x-rays; I have seen several cases of permanent skin damage caused by ill advised roentgen therapy.

W. H. Whitmore, Commander, M. C., U. S. Navy, retired, Norfolk, Va.

JOURNALS ABSTRACTED IN THE CURRENT MEDICAL LITERATURE DEPARTMENT, JANUARY-APRIL 1943

Titles have been listed or abstracts made of important articles in the following journals in the Current Literature Department of THE JOURNAL during the past four months. Any of the journals, except those starred, will be lent by THE JOURNAL to subscribers in continental United States and Canada and to members of the American Medical Association for a period not exceeding three days. Three journals may be borrowed at a time. No journals are available prior to 1933. Requests for periodicals should be addressed to the Library of the American Medical Association and should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Thus most of these journals are accessible to the general practitioner.

American Heart Journal. St. Louis.
American Journal of Clinical Pathology. Baltimore.
American Journal of Digestive Diseases. Fort Wayne, Ind.
*American Journal of Diseases of Children. A. M. A., Chicago.
American Journal of Hygiene. Baltimore.
American Journal of the Medical Sciences. Philadelphia.
American Journal of Obstetrics and Gynecology. St. Louis.
American Journal of Ophthalmology. Cincinnati.
American Journal of Pathology. Ann Arbor, Mich.
American Journal of Physiology. Baltimore.
American Journal of Psychiatry. New York.
American Journal of Public Health. New York.
American Journal of Roentgenol. and Radium Therapy. Springfield, Ill.
American Journal of Surgery. New York.
American Journal of Syphilis, Gonor. and Venereal Diseases. St. Louis.
American Journal of Tropical Medicine. Baltimore.
American Review of Tuberculosis. New York.
Anais brasileiros de ginecologia. Rio de Janeiro.
Anales de la Cátedra de patología y clínica de la tuberculosis. Buenos Aires.
Anales del Hospital de niños e Instituto de puericultura de Rosario. Rosario.
Anesthesiology. New York.
Annales Pædiatrici. Basel.
Annals of Internal Medicine. Lancaster, Pa.
Annals of Otology, Rhinology and Laryngology. St. Louis.
Annals of Rheumatic Diseases. London.
Annals of Surgery. Philadelphia.
Archiv für Gewerbepathologie und Gewerbehygiene. Berlin.
Archiv für Gynäkologie. Berlin.
Archiv für Kreislaufforschung. Dresden.
*Archives of Dermatology and Syphilology. A. M. A., Chicago.
Archives of Disease in Childhood. London.
*Archives of Internal Medicine. A. M. A., Chicago.
*Archives of Neurology and Psychiatry. A. M. A., Chicago.
*Archives of Ophthalmology. A. M. A., Chicago.
*Archives of Otolaryngology. A. M. A., Chicago.
*Archives of Pathology. A. M. A., Chicago.
Archives of Physical Therapy. Chicago.
*Archives of Surgery. A. M. A., Chicago.
Archivos americanos de medicina. Buenos Aires.
Archivos argentinos de pediatría. Buenos Aires.
Archivos de medicina infantil. Havana.
Archivos de pediatría del Uruguay. Montevideo.
Archivos uruguayos de medicina, cirugía y especialidades. Montevideo.
Arquivos da assistencia a psicopatas do estado de São Paulo. São Paulo.
Beiträge zur klinischen Chirurgie. Berlin.
Boletín clínico. Medellín.
Boletín del departamento de salubridad pública. Mexico, D. F.
Boletín del Instituto de clínica quirúrgica. Buenos Aires.
Boletín de los hospitales civiles. Caracas.
Boletín de la Oficina sanitara panamericana. Washington, D. C.
Brain. London.
British Heart Journal. London.
British Journal of Children's Diseases. Dorking, England.
British Journal of Dermatology and Syphilis. London.
British Journal of Experimental Pathology. London.
British Journal of Ophthalmology. London.
British Journal of Radiology. London.
British Journal of Surgery. Bristol.
British Journal of Tuberculosis. London.
British Journal of Urology. London.
British Medical Journal. London.
Bulletin of the Johns Hopkins Hospital. Baltimore.
Bulletin of the Los Angeles Neurological Society.
Bulletin of the New York Academy of Medicine. New York.
California and Western Medicine. San Francisco.
Canadian Medical Association Journal. Montreal.
Canadian Public Health Journal. Toronto.
Cancer Research. Baltimore.
Cardiologia. Basel.
Clinical Science. London.
Connecticut State Medical Journal. Hartford.
Delaware State Medical Journal. Wilmington.
Der deutsche Militärarzt. Berlin.
Dermatologica. Basel.
Edinburgh Medical Journal.
Endocrinology. Springfield, Ill.
Gastroenterologia. Basel.
Hawaii Medical Journal. Honolulu.
Helvetica medica acta. Basel.
Hospital. Rio de Janeiro.
Illinois Medical Journal. Chicago.
Journal of Allergy. St. Louis.
Journal of the Arkansas Medical Society. Fort Smith.
Journal of Aviation Medicine. St. Paul.
Journal of Bone and Joint Surgery. Boston.
Journal of Clinical Endocrinology. Springfield, Ill.
Journal of Clinical Investigation. Boston.
Journal of Experimental Medicine. New York.
Journal of the Florida Medical Association. Jacksonville.
Journal of Hygiene. London.
Journal of Immunology. Baltimore.
Journal of the Indiana State Medical Association. Indianapolis.
Journal of Industrial Hygiene and Toxicology. Baltimore.
Journal of Infectious Diseases. Chicago.
Journal of Investigative Dermatology. Baltimore.
Journal of the Iowa State Medical Society. Des Moines.
Journal of the Kansas Medical Society. Topeka.
Journal of Laboratory and Clinical Medicine. St. Louis.
Journal-Lancet. Minneapolis.
Journal of Laryngology and Otology. London.
Journal of the Maine Medical Association. Portland.
Journal of the Medical Association of the State of Alabama. Montgomery.
Journal of the Medical Association of Georgia. Atlanta.
Journal of the Medical Society of New Jersey. Trenton.
Journal of Mental Science. London.
Journal of the Michigan State Medical Society. Lansing.
Journal of the Missouri State Medical Association. St. Louis.
Journal of the Mount Sinai Hospital. New York.
Journal of the National Cancer Institute. Washington, D. C.
Journal of the National Malaria Society. Tallahassee, Fla.
Journal of Nervous and Mental Disease. New York.
Journal of Neuropathology and Experimental Neurology. Baltimore.
Journal of Neurophysiology. Springfield, Ill.
Journal of Nutrition. Philadelphia.
Journal of Obstetrics and Gynaecology of British Empire. Manchester.
Journal of the Oklahoma State Medical Association. Oklahoma City.
Journal of Pathology and Bacteriology. Edinburgh.
Journal of Pediatrics. St. Louis.
Journal of Pharmacology and Experimental Therapeutics. Baltimore.
Journal of Physiology. Cambridge.
Journal of the South Carolina Medical Association. Florence.
Journal of the Tennessee State Medical Association. Nashville.
Journal of Thoracic Surgery. St. Louis.
Journal of Urology. Baltimore.
Kentucky Medical Journal. Bowling Green.
Klinicheskaya meditsina. Moscow.
Lancet. London.
Laryngoscope. St. Louis.
Medical Annals of the District of Columbia. Washington.
Medical Journal of Australia. Sydney.
Medicina española. Valencia.
Medicina. Madrid.
Medizinische Klinik. Berlin.
Military Surgeon. Washington, D. C.
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SUBJECT INDEX

This is an index to all the reading matter in THE JOURNAL. In the Current Medical Literature Department only the articles which have been abstracted are indexed.

The letters used to explain in which department the matter indexed appears are as follows: "BI," Bureau of Investigation; "E," Editorial; "C," Correspondence; "OS," Organization Section; "ab," abstracts; the star (*) indicates an original article in THE JOURNAL.

This is a subject index and one should, therefore, look for the subject word, with the following exceptions: "Book Notices," "Deaths," "Medicolegal Abstracts" and "Societies" are indexed under these titles at the end of the letters "B," "D," "M," and "S." State board examinations are entered under the general heading State Board Reports, and not under the names of the individual states. Matter pertaining to the Association is indexed under "American Medical Association." The name of the author, in brackets, follows the subject entry.

For author index see page 1472.

A

"A" blood substance, plasma toxicity, [Aubert] 1241—C
A. F. of L.: See Industrial Trade Unions
A. T. 10: See Dihydrotachysterol
ABDOMEN: See also Ascites; Gastrointestinal Tract; Pelvis; Peritoneum
abnormalities, gastroschisis, [Watkins] 1415—ab
concussion (hydraulic): underwater blast injury, [Auster and Willard] *995
concussion; immersion blast injuries, 679—E; 1220—E
Distention: See Flatulence
injuries, nonpenetrating [O'Callaghan] 981—ab
Pain: See Abdomen symptoms
sulfanilamide introduced into, by gauze packing in cigaret drain, [Wise] *666
sulfonamide in, peritoneal response to, [Throckmorton] 1180—ab
Surgery: See also Appendectomy
surgery, granulomas from talcum off surgeon's gloves, [Seelig] 1304—C
surgery, spinal anesthesia in, [Hand] *32
surgery, "total war," [Gordon-Taylor] 981—ab
symptoms in epidemic pleurodynia, [Howard & others] *925
symptoms in rheumatic fever in children, [Hansen] *989
symptoms in schistosomiasis, [Koppisch] *936
wounds, perforating, [Rippy] 1415—ab
ABNORMALITIES: See also Abdomen; Fetus, parasitic; Patella cubiti; etc.
malformations in newborn relation to time of conception, [Petersen & Mayne] *929
ABORTION, abortifacient paste, interstate shipment enjoined, Minn., 775
criminal, chiropractor loses basic science certificate, Minn., 609
criminal, Sophia Peck sentenced, Minn., 271
criminal, Supreme Court refuses to reconsider syndicate case, 1100
criminal, Supreme Court upholds sentence of physician, 446
dichlorstilbestrol value in, [Abarbanel & others] *1123
habitual, treatment, vitamin E intensifies corpus luteum action, [Bach] 220—ab
spontaneous, progesterone for, [Mason] 73—ab
ABSCESS: See also Ulcers; under organ affected as Liver
metastatic, and hemoptysis, 1419
perirectal, role of anal glands, [Hill & others] *712
perirenal, effect on blood pressure, [Braasch] 79—ab
Subphrenic: See Diaphragm abscess
ABSENTEEISM: See Industrial Health, workers absenteeism
ABSORPTION: See under name of specific substance as Lead; Sugar; Sulfanilamide; under organ as Intestines
ACACIA treatment of edema, [Lehnhoff & Binger] *1321
ACADEMY: See also American Academy; New York Academy
Academia Nacional de Medicine, Buenos Aires, 450
of Medicine of Brooklyn committee on psychosomatic medicine, 960
of Medicine of Northern New Jersey, (E. J. Ill Award) 691
of Public Health, organized, N. C., 610
ACCELERATED Courses: See Education, Medical; Pharmacy
ACCIDENTS: See also Disability; Disasters; Trauma; Wounds
Automobile: See Automobiles
Aviation: See Aviation
fatal accidents, in 1942, (Kansas) 531; (National Safety Council report) 694; (Mich.) 1170
ACCIDENTS—Continued
fatal, catastrophes increase, Metropolitan Life report, 611
fatal holiday, decrease, 272
fatal, relation to aortic size and lymphatism, [Millar] 292—ab
fatal, to infants in wartime, 263—E
fatal traffic, show decrease, 273
First Aid for: See First Aid
Industrial: See Industrial Accidents; Workmen's Compensation
Prevention: See National Safety Council; Safety
Traffic: See also Automobiles, accidents
traffic, road, England, 963
ACCLIMATIZATION to discontinuous anoxia, [Stickney] 76—ab
ACETANILID, B-D-Mint Powders, 280—BI
ACETOPHENETIDIN, B-D-Mint Powders, 280—BI
ACETYL-Beta-Methyl Choline Chloride: See Mecholyl
ACETYLCHOLINE, sympathetic and parasympathetic stimulation of cerebral vessels, 224
ACHLORHYDRIA: See Stomach acidity
ACID, Amino: See Amino Acids
p-aminobenzoic, add to blood culture for pneumococcus, [Flippin & others] *235
p-aminobenzoic, in chronic wound infection, 946—E
Ascorbic: See also Vitamin C
ascorbic acid, sodium salt of: Sodium Ascorbate, N. N. R., (Breon) 193
ascorbic, in vascular disease of extremities, [Maynard & Hollinger] *1198
ascorbic, N. N. R., (Walker) 193; (Pitman-Moore) 677; (Wyeth) 839; (McNeil) 1008
ascorbic, placed under allocation control, 57
ascorbic, relation to lead absorption, [Evans & others] *501
black dermographism from jewelry, [Urbach & Pillsbury] *485; [Peck] 489—ab
Cevitamic: See Acid, ascorbic
changes in apple from September through December, 1327—ab
citric, lot to sterilize drinking water, [Violle] 1182—ab
fatty, hepatic, relation to obesity, [Ravdin & others] *323
hippuric, intravenous, liver function test, [Mateer & others] *723; (discussion) 737
Hydrochloric: See Stomach acidity
linoleic, new sponge rubber substitute, 137
Nicotinic: See also Vitamin B1
nicotinic acid amide, N. N. R., (Upjohn) 677
nicotinic acid, N. N. R., (Walker) 193
nicotinic, deficiency and skin disorders in diabetics, [Rudy] 790—ab
nicotinic, diethylamide of, Nikethamide, N. N. R., (Geigy) 945; (Abbott; Drug Products; Smith-Dorsey) 1008
nicotinic, in cancerous tissues, 519—E
nicotinic, niacin deficiency, hypochromic anemia in, [Moore & others] *245
nicotinic, treatment of angina pectoris, [Neuwahl] 157—ab
pantothenic, in cancerous tissues, 519—E
penicillic, anti-infective, [Smith] 851—ab
phosphatase serum in prostate cancer, [Sullivan] 79—ab
Pyruvic, In Blood: See Blood
sulfuric, serum precipitation reaction by, [Tabanera] 295—ab
Tannic: See Burns, treatment
ACID-BASE Balance: See Alkalosis
ACIDITY, Gastric: See Stomach
ACIDOSIS: See Alkalosis
ACNE: chloracne from Halowax; new cleansing mixture, [Morris & Tabershaw] *192; 471
scars, carbon dioxide slush for, [Friedlander] 151—ab
treatment, estrogen, [Lawrence] 152—ab
treatment in adolescent, [Schonfeld] *181
treatment, ultraviolet rays for various types (Council report), *127
vulgaris, fat metabolism in, [LeWinn] 374—ab
vulgaris, x-rays and other methods for, [Smith] 707—ab
ACTINOMYCES, meningitis from, [Skogland] 1179—ab
ACTINOMYCIN, anti-infective, [Smith] 851—ab
ADAMANTINOMA of nose, [de Juan] 709—ab
ADAPTATION, Dark: See Eyes accommodation
ADDICTION: See Alcoholism; Cannabis
ADDISON'S ANEMIA: See Anemia, Pernicious
ADDISON'S DISEASE, first British case of ochronosis diagnosed as, [Twyman] 784—C; [Smith] 1304—C
ADENITIS: See Sweat Glands
ADENOMA, Nontoxic, of Thyroid: See Goiter
pituitary, roentgen therapy, [Kerr] 74—ab
sebaceum, treatment with ultraviolet rays (Council report), *129
Toxic, of Thyroid: See Goiter, Toxic
ADENOMYOSIS: See Endometriosis
ADENYLPYROPHOSPHATE, enzyme identical with myosin? 347—E
ADHESIONS and allergy to catgut [Vaccaro] 982—ab
ADIE'S SYNDROME, [Lowenstein] 288—ab
ADIPOSIS dolorosa, Francis X. Dercum, 435—E
ADJECTIVES, medical, 666—ab
ADOLESCENCE, county society approves plan to examine high school boys, N. Y. C., 60
health training for relch youths, 1227
hemorrhage in, irradiation controls; offspring normal, [Kaplan] *1199
male pubescence, management, [Schonfeld], *177
preadolescent eunuchoidism, androgens change personality, [Kasanin & Biskind] *1317
venereal disease increase (20%) in boys and girls, N. Y., 269
war activities of Girl Scouts and Girl Guides, 92
ADRENALIN: See Epinephrine
ADRENALS: See also Addison's Disease
calcified, epileptiform attacks from, dextrose and adrenal cortex extract for [Lintz] *505
cortex extract, its corpus luteum action on uterus, [Neumann] 296—ab
cortex function (decreased) role in ovarian syndrome [Albright] 786—ab
Cortex Hormone (crystalline): See Desoxycorticosterone acetate
Extract: See Adrenals, calcified; Adrenals cortex; Epinephrine
infarction (hemorrhagic) syndrome [Keele] 892—ab
tumors, pheochromocytoma of medulla, epinephrine shock as sign, [Engel] 786—ab
ADVERTISING: See also Medicolegal Abstracts at end of letter M
Cooperative Medical Advertising Bureau (report) 1367—OS
ADVISORY Council: See under Health
AERONAUTICS: See Aviation
AEROPHAGIA vs. gastrospiry, use of terms, [Dillon] 457—ab
AESCULUS Pile Cerate, 453—BI
AFRICA, War in: See World War II
AFTERBIRTH: See Placenta
AGE, Adolescent: See Adolescence
factor in burn produced by ultraviolet rays, (Council report), *513
factor in children with rheumatic fever, [Ditkowsky & others] *992
middle age, hypertension in those over 40, [Master & others] *1251
middle age, indigestion in, 741—ab
middle age worker (those past 50 or 60) [Carlson] *806
Mother's: See under Maternity
of institution inmates in 1940, 1354—E
of physicians at death, 195—E
of physicians in relation to patient load [Clocco & Altman] *506; [Frame] 1109—C
Old Age: See Old Age
physiologic changes with, relation to work and remuneration, [Carlson] *807; *809
AGED: See Old Age
AGGLUTINATION, intravascular, in avian malaria, 263—E; (replies: work by Dr. Knisely et al. at Tennessee, not Chicago), [Nash] 885—C; [Knisely] 885—C
test for brucellosis, [Borts & others] *319

AGGLUTININS formed within regional lymph nodes, 594—E
Rh: See Blood groups
AGRANULOCYTOSIS, ACUTE, fatal sulfonamide toxicity, [Sutliff & others] *307
feline, virus of, 1353—E
in rats from sulfaguanidine and sulfasuxidine; liver extract prevents, [Spicer] 143—ab
treatment, transfuse leukemic blood, [Rybakov] 710—ab
AIR: See also Oxygen
disinfection, chemical sprays, [Smith] 851—ab
disinfection, glycol vapors, 301
disinfection, ultraviolet, also propylene glycol vapor, 261—E; (to control influenza) [Keefer] *805; [Henle] 890—ab
disinfection, ultraviolet, effect on cross infection in infants ward, [Sommer] 889—ab; [Robertson & others] *908
disinfection, ultraviolet, in schools, 382
disinfection, ultraviolet lamps for, (Council report) 1371—OS
Embolism: See Embolism
Foundation: See Industrial Hygiene Foundation
Injection: See Pneumoperitoneum; Pneumothorax, Artificial (cross reference)
London fogs, 186—ab
Pressure: See also Barometric Pressure
pressure (low), carbon dioxide-oxygen inhalation in [Tarasenko] 1114—ab
Swallowing: See Aerophagia
AIR FORCE: See Aviation; Medicine and the War; World War II
AIR PASSAGES: See Respiratory System
AIR RAIDS, blackouts, road accidents in 1942, England, 963
casualties (civilian) in 11 months, England, 274
health conditions in London during year of, 63
identifying vehicles in blackouts, 1226
perforated peptic ulcer increase and, [Boles] *644
warning, new signal system, 684
AIRCRAFT: See Aviation
AIRPLANES: See Aviation
AITCHISON, DAVID, cure for cancer, 146—BI
ALABAMA, University of: See University
ALBA Pharmaceutical Co. taken over by Winthrop, 204
ALBEE, FRED H., invited to Argentine, 208
ALBUM: See Eggs, whites of
ALCOHOL Addicts: See Alcoholism
Alcoholic Consultation Bureau, Inc., established, 447
alcoholize mesoappendix for appendectomy, 66
Methyl: See Methyl Alcohol
Research Council on Problems of, prize, 365
rubbing, substitutes for, 630
use by the aged, [Tuohy] *48
Wood: See Methyl Alcohol
ALCOHOLISM: See also "Drunkenness" under Medicolegal Abstracts at end of letter M
diagnostic tests, laws on, (Bureau report) 1377—OS
liver function tests in, [Mateer & others] *723; (discussion) 737
ALEPPO Boil: See Leishmaniasis
ALIENS: See Foreigners
ALIMENTARY TRACT: See Digestive System
ALKALI, to prevent post sulfadiazine renal complications [Flippin & others] *233; (value of urine *pH*) [Wu] *1147
ALKALOSIS, respiration and sickness at high altitudes, [Lenggenhager] 294—ab
ALKAPTONURIA: See Urine
ALL UNION Institute of Experimental Medicine (VIEM), 25th year [Eventiev] *436; 521
ALLEN, EDGAR, death, 530
ALLEN, F. W., refrigeration anesthesia prevents thrombosis, [Crossman] 244—ab
ALLERGEN-proof encasings, 345
ALLERGY: See Anaphylaxis and Allergy
ALLOCATIONS: See Priorities and Allocations
ALOPECIA, Ambrew Mate Institute; Hall's Lotta-Lox; mullein cure and George Jean Nathan, 146—BI
diethylstilbestrol cause loss of hair? 224
seborrheica (dandruff), wet comb method of hair dressing encourages, 1116
treatment, ultraviolet rays (Council report) *128
ALPHA Kappa Kappa, annual banquet, 875
Omega Alpha Lecture: See Lectures
ALTITUDE, High: See also Aviation
high, respiration and sickness at, [Lenggenhager] 294—ab
tolerance and increased thyroid activity, [Rotter] 87—ab
ALUMINUM, black dermographism from, [Urbach & Pillsbury] *485
cut injuries from duraluminum, [Sedlacek] 86—ab; (correction) 220
Hydroxide Gel: See Peptic Ulcer, treatment
Silicate: See Kaolin
AMAUROSIS: See Idiocy, amaurotic familial
AMBLYOPIA: See Blindness
AMBRINE, treatment of burns, 300
AMBULANCES: See also Stretcher
German Red Cross entrusted with entire transport of sick, 1292
presented to U. S. Government, 1359
Relief Wings Incorporated, 137
transporting casualties: OCD letter, 1226
AMEBIC Dysentery: See Colitis, amebic; Medicolegal Abstracts at end of letter M
AMENORRHEA, give progesterone to pregnant woman? 162
in lactation, endometrium appearance in, [Topkins] 1414—ab
treatment, diethylstilbestrol, [Abarbanel & others] *1124; *1126
treatment, gonadotropins (serum vs. chorionic type), [Rydberg & Pedersen-Bjergaard] *1117
AMERICAN: See also Americans; Inter-American; Latin American; Pan American; United States; list of organizations at end of letter S
Academy of Orthopaedic Surgeons, (joint meeting) 141; (elections) 611
Academy of Pediatrics, (opens membership to Latin Americans) 62; (medical standards for physicians in public schools) 619
Association for Advancement of Science, (Langmuir's address over radio) 204; (meeting canceled) 1405
Association for the Study of Allergy, (meeting canceled) 1405
Association for the Study of Goiter, (Van Meter Prize) 141; (cancels meeting) 776
Association of Anatomists, (cancel meeting) 961
Association of Cereal Chemists, (lectures by Dr. Baker) 1234
Association of Medical Record Librarians, request A.M.A. to approve schools, 770—OS; *1088; 1398—OS
Association of Obstetricians, Gynecologists and Abdominal Surgeons, (prize contest) 448
Association of Pathologists and Bacteriologists, (cancel meeting) 448
Association of School Administrators (Bureau report) 1374—OS
Board of Internal Medicine, (reduces fee) 141
Board of Neurological Surgery (examinations) 273
Board of Obstetrics and Gynecology (examinations) 62; 693
Board of Ophthalmology, (examinations) 693
Board of Orthopaedic Surgery, (revises bylaws) 961
Board of Otolaryngology, (examinations) 448
Board of Pathology, (new trustees) 141
Board of Psychiatry and Neurology, Inc., (examinations) 273
Casualties: See World War II
Citizenship: See United States citizenship
College of Chest Physicians, (postpones meeting) 776
College of Physicians (plan "teams" for camp hospitals) 135; (course on internal medicine) 1101; (A. M. A. cooperative graduate medical meetings) 1228—OS; 1399—OS
College of Surgeons, (plan teams for camp hospitals) 135; (motion picture on registered nurse) 204; (20 war sessions throughout U. S.) 694; (hospitals approved by) *1010; (A. M. A. cooperative graduate medical meetings) 1228—OS; 1399—OS
Dental Association, (*Journal of Oral Surgery*) 611; (moves into new building) 1171
Diabetes Association, (meeting canceled) 1103
diets, adequacy of, (Gallup poll) 693; [Stiebeling] *831
Federation of Labor: See Industrial Trade Unions
Foundation: See Foundations
Friends Service Committee, aids starving children in Greece and France, 1104
Gastroenterological Association (official journal: *Gastroenterology*) 1158—E
Heart Association, (standardization of electrocardiographic nomenclature) *1347
Hospital Association, (creates wartime service bureau) 611; (Mr. Bugbee executive secretary) 878; (Hospital Plan Commission report) 1099—OS; (activities; plan hospital magazine) 1103
Indians: See Indians, American
Institute of Baking, (Dr. Bing director) 961
Laryngological, Rhinological and Otological Society, (meeting) 141
Law, Institute Model Code of Evidence (Bureau report), 1377—OS
Life Convention (meeting postponed) 611
MEDICAL DIRECTORY, U. S. P. H. S. studies distribution of physicians, 445—OS; (number of physicians of states) 1361—OS; (report) 1366—OS
Optical Co. awarded Army-Navy E, 200
Orthopsychiatric Association, (meeting) 448
Orthoptic Council, (examinations) 878
Pharmaceutical Association (headquarters for quinine pool) 434—E; 842—E
Pharmaceutical Manufacturers' Association (awards to Dr. Doisy) 273; 435—E
Public Health Association, (efforts to extend public health coverage to the nation) 1155—E; (3-day conference); (committee on professional education) 1374—OS
Red Cross: See Red Cross
Russian Committee for Medical Aid to U. S. S. R., Inc., 686
Social Hygiene Association (Snow Medal to Dr. Wilbur) 611
Societies of Experimental Biology, Federation of, (cancels meeting) 205
Society for Clinical Investigation, (meeting canceled) 1236
AMERICAN—Continued
Society for Control of Cancer, (Women's Field Army, honor Mrs. Stoddart) 1171
Society for Research in Psychosomatic Problems, (first meeting) 517—E
Society of Clinical Pathologists (registry of medical technicians) 693; [Holmblad] *821; *822
Society of Tropical Medicine, (Walter Reed medals) 364
Soldiers, etc.: See World War II
Spanish Medical Society: See Hispanic-American Medical Society
Trudeau Society, (meeting canceled) 1405
Urological Association (meeting canceled) 611; (prize not awarded) 776
AMERICAN MEDICAL ASSOCIATION
AMERICAN MEDICAL DIRECTORY, (U. S. P. H. S. analyzes distribution of physicians) 445—OS; (number of physicians by state) 1361—OS; (report) 1366—OS
Annual Conference of Secretaries and Editors, 1362—OS
Annual Congress on Industrial Health, (proceedings) 848—OS
Annual Congress on Medical Education and Licensure, 263—E; (program) 269—OS; 678—E
Archives, (editorial board appointments) 1228—OS; (report) 1366—OS
Association of American Medical College and liaison committee, 769—OS; 1397—OS
Atlantic City session, (correction of minutes) 1362—OS; (publicity by the press) 1367—OS, (exhibits) 1389—OS; (Council on Scientific Assembly report) 1399—OS
Auditor's Report, 1395—OS
Board of Trustees, (meeting Nov. 19-20) 58—OS; (meeting Feb. 18-19) 1228—OS; (report) 1362—OS; 1390—OS
building (war damage insurance to cover headquarters) 58—OS; (report) 1364—OS; (first aid and recovery room) 1374—OS
Bureau of Exhibits, (report) 1389—OS
Bureau of Health Education, (short refresher course in health education), 597—E; (report) 1373—OS
Bureau of Investigation; Abstracts of F. T. C. stipulations, 69; Abstracts of F. D. A. misbranded products, 618, 699, 783; on nostrums dangerous to health because of inadequate warning on labels, 453; 538; on nostrums dangerous to health when used as directed, 280; Abstracts of U. S. P. O. fraud orders, 369; 537; (report) 1388—OS
Bureau of Legal Medicine and Legislation: See also Medicolegal Abstracts at end of letter M
Bureau of Legal Medicine and Legislation, (physician's income tax) 353—OS; (contact with problem of workmen's compensation) [Holloway] 855—ab; (report) 1375—OS
Bureau of Medical Economics, (report) 1383—OS
Chemical Laboratory, (report) 1369—OS
Committee for the Protection of Medical Research, appointment, 58—OS
Committee on American Health Resorts, 1398—OS
Committee on Conservation of Vision, 1228—OS; 1390—OS
Committee on Postwar Plans for Medical Care, 1228—OS
Committee on Scientific Research (report; grants) 1390—OS
Committee on Student Health, 58—OS; (first meeting) 526—OS; 1390—OS
Committee on Therapeutic Research (report; grants) 1368—OS; 1393—OS
committees (various), appointments to, 1228—OS
Conference: See subhead; Annual Conference
Congress: See subhead: Annual Congress
Constitution, proposed amendment on Section delegates, 1362—OS
cooperation with American College of Physicians and American College of Surgeons (in organizing teams for camp hospitals) 135; (graduate medical training) 1228—OS; 1399—OS
Cooperative Committee on Nutrition in Industry, (report) 1369—OS
Cooperative Medical Advertising Bureau (report) 1367—OS
Council on Foods and Nutrition, (vegetable juice cocktails) *258; (enriched white flour) [Williams & others] *943; (Dr. Bing resigns) 961; (report) 1367—OS; (Board of Trustees appoints new members) 1228—OS
Council on Foods and Nutrition, HANDBOOK OF NUTRITION, [Tuohy] *42; [Ebbs] *339; [Curtis & Fertman] *423; [Kruse] *584; *669; [Stiebelling] *831
Council on Industrial Health, (MEDICAL SERVICE IN INDUSTRY series) *259; (list of essentials of industrial medical service) [Hesseltine & others] *799; (Annual Congress: proceedings) 848—ab; (report) [Seeger] 848—ab; (committee on workmen's compensation) [Hussey] 854—ab; (epidemic keratoconjunctivitis) *1153; (Board of Trustees appoints new members) 1228—OS; (meeting) 1229—OS; (report) 1371—OS

AMERICAN MEDICAL ASSOCIATION—Continued
Council on Medical Education and Hospitals, (meetings Feb. 13-14, 1943) 769—OS; (continuation courses) ★967; (hospital data) ★1009; (births in hospitals) 1092—E; (report) 1396—OS; (Dr. Victor E. Johnson new secretary) 1399—OS
Council on Pharmacy and Chemistry: See also subhead: NEW AND NONOFFICIAL REMEDIES
Council on Pharmacy and Chemistry, (human convalescent serum: measles, scarlet fever) ★49; (Board of Trustees appoints new members) 58—OS; 1228—OS; (Staphylococcus Toxoid, digest modified, Lederle) 193; (ampules of camphor; consultant's views) 431; (evaluating skin disinfectants) 593; (zinc Insulin crystals; crystalline zinc insulin injection) 592; (should insist on differentiating types of bile salts on label) [Yegge] 720—ab; (external use of cod liver oil) ★759; (Menadione Bisulfite) 839; (annual meeting, Oct. 1942) 858; (oral use of sodium salts of sulfonamides) ★1008; (diodrast concentrated solution for organography) 1351; (report) 1367—OS; (membership; Dr. Smith appointed secretary) 1368—OS
Council on Physical Therapy, (therapeutic value of ultraviolet radiation) ★126; ★513; (minimum requirements for electrical hearing aids) 591; (interest in rehabilitation) [Coulter] 866—ab; (Board of Trustees appoints new members) 1228—OS; (report) 1370—OS
Council on Scientific Assembly, (report) 1399—OS
Councils, (appointments) 1228—OS; (war service of members) 1363—OS
Distinguished Service Medal, (nominations open) 1222—E
employees, (number in armed service) 1362—OS; (number employed: 561) 1364—OS
Employees Library, 1366—OS
exhibit of the Association, (report) 1389—OS
Fellowship, (dues now payable) 130—E; (number; report) 1361—OS; 1365—OS
financial report, 1363—OS; 1390—OS; 1395—OS
grants for research, 1368—OS; 1390—OS; 1393—OS
Headquarters: See subhead: Building
hospital insurance, conference with 3 hospital associations on, 58—OS
hospitals approved for internships; residencies, 769—OS; ★1027; 1398—OS
House of Delegates, (to meet June 7) 58—OS; (official call; list of members) 1165—OS; (dinner) 1228—OS; (correction of 1942 minutes) 1362—OS; (reapportionment of delegates) 1362—OS
Hygeia, (report) 1366—OS; (loan clipping collections) 1373—OS
Income and expenditures, (report) 1363—OS; 1395—OS
Indictment: See subhead: U. S. Dept. of Justice
Joint Committee of N. E. A. and, on Health Problems in Education, 1228—OS; 1374—OS
JOURNAL, (subscription now payable) 130—E; (medical progress and) 132—E; (war service of editor: Dr. Fishbein) 1363—OS; (Section papers for 1943 to be published) 1364—OS; 1399—OS; (report) 1364—OS; 1395—OS; (per cent of physicians receiving) 1365—OS; (paper rationing and) 1363—OS; 1364—OS; 1365—OS
journals, special, (editorial board, appointments) 1228—OS; (paper rationing; cost) 1363—OS; 1364—OS; 1366—OS; (report) 1366—OS
Judicial Council (report on apportionment of of delegates) 1362—OS; (report to appear later) 1396—OS
libel suits filed against, 1395—OS
Library, (report) 1366—OS
Mailing and Order Department, (report) 1367—OS
MANUAL OF PHYSICAL THERAPY; MANUAL OF OCCUPATIONAL THERAPY, [Coulter] 866—ab; 1370—OS
medical-pharmaceutical cooperation, (Council discusses) 839; 1368—OS
medical schools approved by, 1398—OS
Medical Service Plans Council organize committee to cooperate with, 1298
membership, (report) 1361—OS
MEDICOLEGAL CASES: 1936-1940, 197—E; 1375—OS
metric system adopted for use in publications instead of apothecary system, 839
motion pictures available for loan by, (Bureau report) 1368—OS
NEW AND NONOFFICIAL REMEDIES, (Council discusses policies) 839; (number published; free to students) 1368—OS
News, (report) 1367—OS
Officers: See also under other subheads as President; Secretary
Officers, (deaths) 196—E; **(report) 1361—OS**; (war service) 1363—OS
Package Library, (report) 1366—OS
periodical lending service, (report) 1366—OS
planning for postwar medical care, 130—E; 136; 764—E; 769—OS; 1094—E; 1228—OS

AMERICAN MEDICAL ASSOCIATION—Continued
President Paullin, installation June 8, 1165—OS; 1361—OS
press relations: *American Medical Association News*, (report) 1367—OS
Primer on Fractures (5th edition), 1390—OS
public health coverage of the nation advocated by, 1155—E
QUARTERLY CUMULATIVE INDEX MEDICUS, (report) 1366—OS
radio program: (tribute to A. W. Kenner on) 199; (Doctors at War; Before the Doctor Comes) 357—OS; 872; (Homemakers' program on WLS) 357—OS; (recording broadcasts for county society use) 1228—OS (also radio library service) 1373—OS
Reports of Officers, April 24, 1943, 1361
resolution on certification of checks in payment of narcotic tax, (Bureau report) 1376—OS
San Francisco Session (cancellation) 1361—OS; 1399—OS
schools for clinical laboratory technicians approved by, 770—OS; ★1088; 1398—OS
schools for medical record librarians, request A. M. A. to approve, 770—OS; ★1088; 1398—OS
schools for occupational therapy approved by, 770—OS; 1086; 1398—OS
schools for physical therapy technicians approved by 770—OS; ★1087; 1398—OS
Scientific Exhibit at Atlantic City session, (report) 1389—OS
Secretary, (report) 1361—OS
Section on Laryngology, Otology and Rhinology *Transactions* discontinued, 1228—OS
Section on Nervous and Mental Disease (chairman's address, Dr. Throckmorton: Francis X. Dercum) 435—E
Section on Obstetrics and Gynecology, committee report: women in industry, [Hesseltine & others] ★799
Section on Ophthalmology committee report on epidemic keratoconjunctivitis, ★1153
Sections, (list of delegates to House of Delegates) 1166—OS; (Constitution amendment on delegates) 1362—OS; (officers to continue for 1943): 1399—OS; (papers for 1943 to be published in J. A. M. A.) 1364—OS; 1399—OS
session for general practitioners, 1399—OS
STANDARD NOMENCLATURE, [Jordan] ★1001; (used by hospitals) ★1026
Treasurer's report, 1394—OS
U. S. Dept. of Justice indictment, Supreme Court decision, 262—E; **267—OS**; (payment of fine; statement by Board) 1228—OS
V-Mail Letter for medical officers in armed forces, 262—E; 1363—OS
war effort, participation in, 1362—OS; (Library and Abstracting Dept.) 1363—OS; 1366—OS; (J. A. M. A.) 1364—OS; (Council on Pharmacy and Chemistry) 1367—OS; (Council on Industrial Health) 1372—OS; (Bureau of Medical Economics) 1383—OS
War Medicine, (made available to British institutions by Macy Foundation) 265; (report) 1366—OS
War Participation Committee (report on meeting, Dec. 14, 1942) 134; (urge state societies to form committees) 438; (cooperation with A. M. A. Council on Industrial Health) 1229—OS
Woman's Auxiliary: See Woman's Auxiliary
AMERICANS do not eat wisely, says Gallup poll, 693; [Stiebeling] ★831
War Service of: See Medicine and the War; World War II
AMIGEN, treatment of shock from repeated hemorrhage, [Elman & Lischer] ★498
AMINO ACIDS: See also Histidine
in liver cirrhosis, [Yater] 720—ab
indispensable, 335—ab
role in nutrition, 765—E
serum precipitation reaction by sulfuric acid, [Tabanera] 295—ab
to counteract postoperative nitrogen loss, 346—E
to maintain nitrogen equilibrium, [Altshuler & others] ★163
treatment of shock from repeated hemorrhage, [Elman & Lischer] ★498
AMINOPHYLLINE: See Theophylline Ethylenediamine
AMMONIUM compounds (quaternary): antiinfective agent, [Smith] 851—ab
AMMUNITION: See Bombs; Munitions
AMNION: See Placenta
AMPHETAMINE (benzedrine), inhaling precipitate coronary occlusion? (reply) [Edwards] 630
sulfate, antispasmodic action on colon, [Atkinson & others] ★648
sulfate fatal poisoning in 1 year old girl, [Hertzog & others] ★256
treatment of obesity, 796
AMPUTATION, industrial employment after, [Harvey & Luongo] ★106; [Bartle] ★1002
HANDBOOK ON AMPUTATIONS, 1371—OS
on British in German prison camps: fitting artificial limbs, 1172
refrigeration (Allen's) preceding, prevents thrombosis, [Crossman] 244—ab

AMPUTATION—Continued
thigh, prevent pulmonary complications by high ligation of femoral vein, [Veal] ★240
thigh, prevent pulmonary embolism by early rising, avoiding tourniquet, [Samuels] 700—C
ANACIDITY: See under Stomach
ANAESTHESIN Jelly, N. N. R. (Winthrop) 593
ANAL GLANDS, role in anorectal disease, [Hill & others] ★742
ANALES: See Journals
ANALGESIA: See Anesthesia; Pain, relief of
ANAPHYLAXIS AND ALLERGY: See also Asthma; Eczema
allergen-proof encasings, 345
allergy and workmen's compensation procedure [Clarke] 855—ab
allergy to catgut and adhesions, [Vaccaro] 982—ab
American Association for Study of Allergy (meeting canceled) 1405
death (sudden) after injecting foreign protein, [Vance] 74—ab
desensitization (cross) in allergic diseases, [Maunsell] 1311—ab
desensitization (spontaneous) in occupational eczema [Koch] 87—ab
desensitization to histamine, [Browne] 289—ab
heredity of allergic tendencies, 551
latent allergy, [Albus] 88—ab
sensitivity to adrenal, [Crief] ★421
sensitivity to bedbugs as cause of asthma [Lahoz] 157—ab
sensitivity to bubble bath preparations, 1250
sensitivity to cocaine and iodine before bronchography, 1250
sensitivity to cold with nasal symptoms, 713
sensitivity to contrast medium, ocular test [Archer] 978—ab
Sensitivity to Light: See Light
sensitivity to odor of horses and horse serum hypersensitivity, [Hartmann] 88—ab
sensitivity to pollen in Brazil, 276
sensitivity to rubber service (gas) masks, [Lewe] ★422
sensitivity to sulfathiazole after local and oral use [Livingood & Pillsbury] ★106
sensitivity to sulfathiazole locally, [Weiner] ★411
sensitivity to sulfathiazole locally in varicose eczema, [Cohen & others] ★408
sensitivity to sulfonamides, [Erskine] 625—ab
sensitivity to thiamine, [Eisenstadt] 132—ab
serum sickness, possible late complications, 1185
ANATOMISTS, American Association of (meeting canceled) 961
ANATOMY, Morbid: See Pathology
National Conference of (1st) 450
scientific, beginning of, Vesalius and the Fabrica, 1543-1943, [Castiglioni] ★582; (celebration at New York Academy) 609; (exhibit at Cleveland) 1297
ANCYLOSTOMA brazilense, incidence in U. S., 552
ANDREWES, C. H., research on poliomyelitis inhibition, 194—E
ANDROGENS, methyl testosterone induces puerperal genital changes, [Rutherford] 73—ab
prostate cancer relationship; priority in proving, [Ruggles] 1405; [Munger] 1409—C
syndrome of gynecomastia, etc., [Klinefelter] 152—ab; (correction) 548
testosterone for male gonadal failure, [Heller] 1176—ab
testosterone implanted for eunuchoidism changes personality [Kasanin & Biskind] ★1317
testosterone propionate for obesity or Fröhlich syndrome in infant, 898
testosterone propionate, metabolic effects, [Knowlton] 542—ab
testosterone propionate pellet implantation in gynecic disorders, [Greenblatt] ★17
treatment, effect on woman's voice, [Goldman] 978—ab
treatment of male pubescence, [Schonfeld] ★178; ★181
ANEMIA, aplastic, post arsphenamine, [Rof Carballo] 86—ab
aplastic, in fatal sulfonamide toxicity, [Sutliff & others] ★307
erythroblastic (Cooley) in infants, 1300
hemolytic (acute) after sulfapyridine etc., [Dowling & Lepper] ★1193
hypochromic achlorhydric microcytic, in child, iron for, [Dacie] 545—ab
hypochromic, after gastric resection, [Hemmeler] 377—ab
hypochromic, in avitaminosis B; iron and yeast for, [Moore & others] ★245
in kyphoscoliosis, [Reimann] 1312—ab
in women and children on wartime diets, England, [Wills] 1181—ab
iron deficiency, nutritional, in wartime, [Davidson] 376—ab
macrocytic nutritional, [Trowell] 1416—ab
secondary, ultraviolet rays for, (Council report), ★126
sickle cell, erythrocyte equilibrium in; effect of oxygen, [Reinhard] 1245—ab
type of, diagnosis, 1186
ANEMIA, PERNICIOUS, effect of arsenic on erythropoiesis, [Limarzi] 1245—ab

ANESTHESIA, alcoholize mesoappendix for appendectomy, 66
barbiturates intravenous (evipal, pentothal sodium) for wounded, [Beecher] *901
barbiturates, shock delaying action, [Beecher] 372—ab
caudal continuous, in obstetrics, [Hingson & Edwards] *225; [Gready & Hesseltine] *229; (statements by Drs. Vaux, Irving and Lundy) 260—E; (use of nylon ureteral catheter as used by Manalan) [McCormick] 700—C; (cost of) [Wood] 966—C
choice of, for seriously wounded patients, [Beecher] *899
cocaine, safety as local anesthetic, 472
ether, shipping; how to label, 948—E
Fatalities: See under subheads as Anesthesia, paraldehyde
in perforated peptic ulcer, [Beecher] *902
local, in obstetrics and gynecology, [Greenhill] 375—ab
local or general, for adult tonsillectomy, 898
morphine sulfate as obstetric analgesic, [Mengert] 284—ab
paraldehyde fatalities, [Burstein] *187; (reply; its safety) [Miller] 783—C; [Burstein] 1241—C
pathologic, in leg with ulcer, 1316
pentothal sodium and cyclopropane, insulin shock in diabetic under, [Papper] 286—ab
pentothal sodium, in thoracic surgery, [Randolph & Kober] *1215
pentothal sodium, simple holder for giving, [Hope] *753
procaine solutions with and without adrenalin in dental surgery, (reply) 224
refrigeration, Allen's method prevents thrombosis, [Crossman] 344—ab
solutions, glass cartridges for, 472
spinal, factors affecting its success, [Hand] *32
spinal, for seriously wounded, [Beecher] *901
spinal high, circulatory adjustments during, [Papper & others] *27
ANESTHETISTS, nurse, number in all hospitals, 1942, *1020
ANEURYSM, arteriovenous, pulsating exophthalmos, [Martin & Mahon] *330
of peripheral arteries in endocarditis, [Castex] 709—ab
of renal artery, [Lowsley & Cannon] *1137
roentgenography (contrast) in diagnosis, [Taylor & McGovern] *1270
roentgenography in diagnosing aortitis, 299
ANGINA, Agranulocytic: See Agranulocytosis, Acute
ANGINA PECTORIS, intervertebral disk rupture simulates, [Semmes & Murphey] *1209
treatment, nicotinic acid, [Neuwahl] 157—ab
treatment, short wave diathermy, 897
treatment, surgical, [Valdivieso] 548—ab
ANGIOCARDIOGRAPHY with diodrast, [Taylor & McGovern] *1270; (Council report) 1351
ANGLO-HELVETIAN, new element (no. 85), Dr. Alice Leigh-Smith discovers, 695
ANGLO-SOVIET: See England
ANIMAL EXPERIMENTATION, federal legislation on, in D. C., (Bureau report) 1381—OS
ANIMALS: See also Veterinarians; Zoological Park; under specific names as Birds; Cats; Dogs; Hogs; Rats; Squirrels; etc.
zoo, parasitic infections in children from feeding; Baby Pet Zoo, (reply) [Ratcliffe] 898
ANKLE, injuries, from skiing, [Moritz] *98
ANOMALIES: See Abnormalities; under organ or region affected
ANOXIA: See Oxygen deficiency
ANTHRAX in dogs and cats, 713
treatment, sulfonamides, [Gold] 215—ab
ANTIBIOTICS, [Smith] 851—ab
ANTIBODIES: See also Agglutinins; Antigens; Encephalitis, Epidemic; Whooping Cough
function of lymph nodes, 594—E
ANTIGENS: See also Antibodies
A and B group specific substances as, [Aubert] 1241—C
Rh: See Blood groups
ANTI-INFECTIVES: See Antiseptics; Disinfectants
ANTIPYRINE added to quinidine hydrochloride for arrhythmias, [Sturnick & others] *917
ANTISEPTICS: See also Disinfectants; Sterilization, Bacterial
evaluation, [Hunter] *25
Intestinal, sulfaguanidine, [Vieta] 703—ab
ANTITOXIN: See Biologic Products; Staphylococcus
ANTS, Goodhue "bomb" to control, 846
ANURIA: See Urine, suppression
ANUS: See also Hemorrhoids
acne conglobata and pyoderma, low fat diet and thyroxin for, [Sutton & Marks] *1344
disease, role of anal glands, [Hill & others] *742
AORTA, ascending, fistula between superior vena cava and, [Barker] 291—ab
roentgenography (contrast), [Taylor & McGovern] *1270
size, status lymphaticus and accidental death, [Millar] 293—ab
AORTITIS, diagnosis, roentgenography; positive Wassermann test in late syphilis, 299
syphilitic, liver function in, [Chávez & others] *1276
APOTHECARY system, use metric system instead in Council publications, 839
APPARATUS: See also Cyclotron; Diathermy; Instruments; Ultraviolet Rays
device for detecting feigned deafness, [Pitman] *752
for injection into sacral area in caudal anesthesia, [Hingson & Edwards] *228
simple holder for giving pentothal sodium, [Hope] *753
APPENDECTOMY, alcoholize mesoappendix for, 66
APPENDICITIS, placing sulfanilamide into peritoneal cavity, technic, [Wise] *666
rheumatic fever diagnosed as, [Hansen] *987
APPENDIX, Enterobius vermicularis in, [Schönken] 151—ab
Excision: See Appendectomy
APPETITE, starch eating, 1250
APPLES, fresh, consumption per capita, [Stiebeling] *832
Gerber's Junior Foods—pudding, 677
green, chemical changes in, from September through December, 1327—ab
White House Apple Juice, 697
ARC Welding: See Welding
ARCE, JOSÉ, visiting U. S., 208; (returns) 696
ARCHIVES: See American Medical Association; Journals
ARCUS senilis (lipoides corneae), clinical significance, [Rintelen] 157—ab
ARGENTINE Congress of Surgery (14th), 450
Congress on Endemic and Epidemic Diseases (1st) 450
Medical Association, (2nd reunion) 696
Society of Proctology of Buenos Aires, 696
ARGOSINE, 453—BI
ARGYROL, allergy to, [Criep] *421
ARMS: See also Elbow; Fingers; Hand
Amputation of: See Amputation
splint employing plywood, [Parcher] 217—ab
tumors after injecting estrogens in sesame oil into, [Conrad & others] *237
ARMSTRONG-JONES, SIR ROBERT, death, 777
ARMY: See also Soldiers (cross reference); War; World War II
British: See also World War II
British, medical research in, 1299
Camp: See Medicine and the War; World War II
ARMY, UNITED STATES: See also Medicine and the War; World War II
E Award: See Medicine and the War
laboratory officers, training of at U. of Chicago, 599
Medical Corps, women physicians in, 1379—OS
Medical Department; accomplishments since Pearl Harbor, 762—E
medical education, 55; (medical academy proposed) 1380—OS
medical officer, R. T. King impersonates, 1169
pharmacy and chiropody corps in, 1380—OS
personnel, attendance as students at educational institutions, 1379—OS
rank on initial appointment as medical officers, 56
School of Military Neuropsychiatry opened, 265; 1154—E; [Halloran & Farrell] *1159
Specialized Training Course, 55; [Elliott] *631: [Dalton] *633; [Diehl] *635; 678—E
ARRHENOMIMETIC Phenomenon: See Viritism
ARRHYTHMIA: See also Auricular Fibrillation
treatment, urea and antipyrine plus quinidine intramuscularly, [Sturnick & others] *917
ARSENIC, effect on erythropoiesis, [Limarzi] 1245—ab
in Blood: See Blood
ARSENICALS: See also Arsphenamine; Mapharsen
optic atrophy from, [Longley] 543—ab
ARSPHENAMINE: See also Neoarsphenamine
treatment, panmyelophthisis after, [Rof Carballo] 86—ab
treatment, toxic myelopathies after, [Lichtenstein] 287—ab
ART in therapy exhibit, 692
ARTERIES: See also Aorta; Arteriosclerosis; Blood Vessels; Ductus Arteriosus; Veins
Aneurysm: See Aneurysm
carotid, ligation, also Dandy's direct method for pulsating exophthalmos, [Martin & Mahon] *330
Coronary: See also Angina Pectoris; Arteriosclerosis
coronary disease, early work on, 420—ab
coronary disease, intervertebral disk rupture simulates, [Semmes & Murphey] *1209
Coronary, Occlusion: See also Myocardium infarction; Thrombosis, coronary
coronary occlusion, inhaling amphetamine precipitate? (reply) [Rhoads] 630
coronary occlusion or biliary colic? 985
coronary occlusion, pregnancy after; successful termination, [Horwitz & others] *1342
coronary occlusion, total collapse on physical exertion, [Joki] 454—C
coronary stenosis, syphilitic, with myocardial infarction, [Burch] 888—ab
Fistula: See Fistula
Inflammation: See Endarteritis
Pressure in: See Blood Pressure
roentgen study in bone lesions, [López Areal] 378—ab
ARTERIES—Continued
roentgen study to diagnose aneurysm of renal artery, [Lowsley & Cannon] *1137; [Howard] 1143—ab
"spiders" in pregnancy and liver disease; relation to estrogens, [Bean] 1412—ab
stagnation theory in postarteriolar bed in spinal anesthesia, [Papper & others] *29
ARTERIOGRAPHY: See Arteries, roentgen study
ARTERIOSCLEROSIS, atherosclerosis in hypertension [Daley & others] *386
coronary, differential diagnosis, [Barnes] 462—ab
heart disease, contrast roentgenography in, [Taylor & McGovern] *1270
heart disease, liver function in, [Chávez & others] *1276
hyperactive vasodepressor carotid sinus reflex, [Sigler] 623—ab
indigestion in later life, 741—ab
thrombocyte deficit test, [Maynard & Hollinger] *1195
ARTERITIS: See Endarteritis
ARTHRITIS: See also Rheumatism
Casey's Compound, 286—BI
gonococcic chronic, sulfathiazole or fever therapy for? 714
in liver dysfunction, [Portis] *733; (discussion) 737
industrial placement and, [Bartle] *1002
rheumatoid, and heart disease in necropsies, [Bayles] 1309—ab
Robinson's for Arthritis, 884—BI
symptom after streptococcic sore throat, [Bloomfield & Rantz] *316
treatment, gold, [Block] 979—ab
ARTHROPOD borne virus encephalitides [Hammon] *560
ARTICLES: See Journals
ARTICULATIONS: See Joints
ARTIFICIAL Pneumothorax: See Pneumothorax, Artificial (cross reference)
ASBESTOSIS: See Pneumonoconiosis
ASCITES fluid, intravenously after paracentesis in portal cirrhosis [Greene] *715
ASCOLI Treatment: See Malaria, 91
ASCORBIC Acid: See Acid
ASHFORD, BAILEY K., biographical note, 599
ASPERMATOGENESIS: See Spermatozoa
ASPHYXIA: See also Suffocation
E & J Resuscitator, 1219
ASPIRATOR, E & J, 1219
ASSASSIN bugs, transmit trypanosomiasis (Chagas' disease) 65
ASSAY of biotin and avidin, [Rhoads & Abels] *1261
ASSOCIATED Hospital Service of New York, (L. H. Pink president) 140; 1099—OS
Hospital Service of Philadelphia, (annual report) 610; (correction) 777
ASSOCIATION: See also American Association; American Medical Association; under list of Societies at end of letter S
Asociacion Argentina de Dermatologia y Sifilologia, 209
Associacion Congresos de Cirurgia, 208
for Advancement of Psychoanalysis, (neuroses and psychoses in wartime) [Trippe] 80—ab; (lecture on child psychotherapy) 203
for Advancement of Psychotherapy (elections) 611
for Study of Internal Secretions, (meeting postponed) 272
of American Medical Colleges, (tropical medicine study) 499; 533; (liaison committee meeting with A. M. A.) 769—OS; 1397—OS
of American Physicians, (meeting canceled) 1236
of Scientific Workers in Great Britain, 612
ASTHENIA: See also Fatigue; Neurasthenia
neurocirculatory, iatrogenic disorders, 879
ASTHMA: "Asthmanol" 282—MI
A-Z Tablets, 884—BI
etiology: sensitization by bedbugs, [Lahoz] 157—ab
Halomist, 280—BI
Hart's Compound Asthma Medicine, 538—BI
mucosa of bronchi and sinuses changes characteristic of, 898
No Wheez for Asthma, 783—BI
Society for Study of, (elections) 776
treatment, ether in oil intramuscularly, [Maletta] 890—ab
treatment, phenytoin sodium, 1316
treatment, sulfapyridine, [Jiménez-Díaz] 86—ab
treatment survey of 459 patients over 20 years, [Unger & Wolf] *825
ASTHMANOL, asthma remedy, 282—MI
ATABRINE: See Quinacrine
ATHLETE'S Foot: See Dermatophytosis
ATHLETICS: See also Exercise
gymnasium for rehabilitating disabled neurotic worker, [Solomon] 865—ab
heart rate below 50 in athletes; rate of 44 in 2 men, [Wilburne] 706—C
ski injuries, [Moritz] *97
Swimming: See Swimming

ATLANTIC CITY Session: See American Medical Association
ATMOSPHERE: See Air
ATOM Smashing: See Cyclotron
ATROPHY, Muscular: See also Dystrophy, muscular
muscular, progressive; chronic thyrotoxic myopathy resembling, [McEachern] 83—ab
Optic: See Nerves, optic
Sudeck: See Osteoporosis, post-traumatic
ATROPINE, antispasmodic action on colon, [Atkinson & others] ★648; ★649
injection (hypodermic) relieves fatigue, [Portis & Zitman] ★569
AUDIOMETERS (Council report), 1371—OS
AURICULAR FIBRILLATION, paroxysmal, prognosis, [Cooke] 545—ab
treatment, urea and antipyrine plus quinidine intramuscularly, [Sturnick & others] ★917
AUROTHERAPY: See Gold treatment
AUSTRALIA: See World War II
AUTOTOXICATION, Intestinal: See Toxemia
AUTOMOBILES, accidents, fatal in 1942, 273; (National Safety Council report) 694; (Mich.) 1170
accidents, pregnant uterus rupture from, [Woodhull] 82—ab
emergency mobilization of motor vehicles, 1359
identification in blackout, OCD letter, 1226
AUTOPSIES: See also Coroner; Medicolegal Abstracts at end of letter M
hospital deaths and, compared with admissions, ★1019
performance in hospitals, ★1024; ★1025
AVENDANO, JORGE, Peruvian physician visits plasma laboratories, 768
AVIATION: See also Altitude, high
accidental deaths in 1942; National Safety Council report, 694
Air Raids: See Air Raids
aircraft industry, employ handicapped in, [Harvey & Luongo] ★102
Army Air Force Medical Departments Officers graduate, Fla., 683
aviators' sickness, 936
carbon dioxide-oxygen inhalation in low pressure areas, [Tarasenko] 1114—ab
cerebral disturbances during acrobatic flights, [Pescador] 378—ab
civil air patrol transports plasma in emergencies, 601; 953
courses to orient medical officers for air forces, 683
erythrocytes, hemoglobin, acclimatization to discontinuous anoxia, [Stickney] 76—ab
flight surgeon (army), function of, 264
flight surgeons' assistants, 265
flight surgeons, memorial window in Randolph Field chapel, 846
interns and residents in air force hospitals, 1223
Journal of Aviation Medicine now 6 times a year, 1171
medical examiners, 264; 523; 1356
medicine, A. M. A. Council's committee discharged, 1230—OS
medicine, Dr. Schneider given John Jeffries Award, 272
medicine, Liljencrantz Memorial Collection at Stanford, 774
medicine, school of, 25th year, 1355
medicine symposium, Boston, 447
parachutist physician (Lieut. Rob) awarded military cross, 768
physiologists graduated at School of Aviation Medicine, Texas, 683; 1096
priorities for "life and death" emergencies in airplane travel, 204
Relief Wings Incorporated, air ambulance, 137
rescue method (Flickinger) for pilots forced down at sea, 766
Royal Air Force, head injuries in, [Symonds] 1311—ab
treatment of whooping cough by high altitude flights, [Lauener] 626—ab
tuberculosis in young aviators, 143
AVIDIN treatment of cancer, 92; (also of lymphatic leukemia) [Rhoads & Abels] ★1261
AVITAMINOSIS: See Vitamins deficiency
AVOCATIONS: See Physicians
A-Z Tablets, 884—BI
AZOCHLORAMID: See Chloroazodin
AZOSULFAMIDE: See Sulfonamide Compounds
AZOTEMIA: See Uremia
AWARDS: See Prizes

B

"B" blood substance: plasma toxicity, [Aubert] 1241—C
BACILLUS: See Bacteria
BACK: See also Sacrum; Spine
lotion, rubbing alcohol substitutes, 630
BACKACHE: See also Sciatica
diagnosis, differential, 223
low back pain, differential diagnosis with procaine test, [Hyndman & others] ★390
Robinson's for Lumbago, 884—BI
BACTEREMIA: See also Septicemia
serologic groups of etiologic organisms, [Rantz] 705—ab
BACTERIA: See also Gonococcus; Pneumococcus; Staphylococcus; Streptococcus; Tubercle Bacillus; etc.; under names of organs
Abortus Infection: See Brucellosis
BACTERIA—Continued
bacteriostatic and bactericidal action of disinfectants, [Hoyt] 465—ab
bacteriostatic and bactericidal qualities of cod liver oil, (Council report) ★761
Coli: See Escherichia coli
Culture: See also Gonococcus; Pneumococcus
culture medium: coconut water, [Picado T.] 295—ab
Ducrey's: See Chancroid
extracts, anti-infective agent, [Smith] 851—ab
in Air: See Air disinfection
in Blood: See Bacteremia; Septicemia
Proteus: See Proteus
Pyocyaneus: See Pseudomonas aeruginosa
Soil Bacillus Substance: See Gramicidin
Typhosum: See Eberthella typhosa
Welchii: See Clostridium
BACTERICIDES: See Antiseptics; Disinfectants; Sterilization, Bacterial
BACTERIOLOGY, American Association of Bacteriologists cancel meeting, 448
Microbiological Society of Palestine, 1105
Society of Illinois Bacteriologists, meeting, 531
BACTERIOSTATIC: See Bacteria
BACTERIUM: See Bacteria
BAGASSOSIS, industrial lung disease, [Castleman] 293—ab
BAILLIE, MATHEW, incident of William Stark and, [Holman, Moorman] 966—C
BAKER, NORMAN, loses again in court, 875
BAKERS: See also Bread
eczema, spontaneous desensitization, [Koch] 87—ab
BALDNESS: See Alopecia
BANDAGE: See Dressings
BANTING, Sir FREDERICK, honor memory, 612
BARBITURATES: See also Anesthesia; Pentothal
use, laws regulating (Bureau report) 1375—OS
BARBOUR, PHILIP F., portrait, 1101
BARCROFT, Sir JOSEPH, respiratory patterns at birth, 1354—E
BARKAN'S Operation: See Goniotomy
BAROMETRIC PRESSURE at time of conception, effect on newborn, [Petersen & Mayne] ★929
BASAL Metabolism: See Metabolism
BASEDOW'S Disease: See Goiter, Toxic
BASIC Science Act: See Medical Practice Act
BATES, JOHN H., missing, 1358
BATHS: See also Swimming
bubble bath preparations, rash from, 1250
Sulfo-Bath, 69—BI
BAUER and Black, new sponge rubber substitute made of linoleic acid, 137
BAXTER Laboratories, Inc., Army-Navy E to, 1292
BAZIN'S Disease: See Tuberculosis indurativa
BCG: See Tuberculosis, diagnosis; Tuberculosis, immunization
B-D-Mint Powders, 280—BI
BEANS, Cellu Green Lima Beans, 677
thrombidiosis in soldiers from picking, [Schuppli] 219—ab
BEAUMONT Room, lecture marks dedication, 691
BECOMPX Capsules, Hain, 699—BI
BED Capacity: See Hospitals
not confined to, after operation, prevents pulmonary embolism, [Samuels] 700—C
BEDBUGS, asthma from sensitization by, [Lahoz] 157—ab
carriers of Brazilian typhus, 65
BEDDING: See Blanketing; Mattress; Pillows
BEES: See Honey
BEGG Society Lecture: See Lectures
BEHAVIOR: See also Personality
disturbance, chorea with, 1186
BENZEDRINE: See Amphetamine
BENZENE: See also Dimethylaminoazobenzene
poisoning vs. adequate food and vitamins, [Cowgill] 868—ab
BENZOL: See Benzene
BENZYL ALCOHOL with sodium morrhuate N. N. R. (Breon), 945
BEQUESTS: See Donations (cross reference)
BERLOCK dermatitis and ultraviolet radiation, (Council report) ★514
BERMAN-Moorhead foreign body finder, [Moorhead] ★123; (Navy given funds to buy) 1359
BERNARD Lecture: See Lectures
BESGRO Formula, 146—BI
BETAINE, viral chemoprophylaxis, 435—E
BEVERAGES: See also Coffee; Milk; Tea; Water
Alcoholic: See Alcohol
carbonated, use by industrial workers, [Wilder] 869—ab; [Pett] 871—ab
for the aged, [Tuohy] ★48
high protein (milk, dryco, egg white) [Bauman & Gage] ★1283
BEVERIDGE report, planning for postwar medical care, 130—E; 142; 1299; 1406
BIGGS Lecture: See Lectures
BILE salts, choline chloride plus fat diet for icterus gravis neonatorum, [Danis] 544—ab
salts, A. M. A. Council should insist on label differentiation, [Yegge] 720—ab
secretion, cholagogues given with diethylstilbestrol, [Abarbanel & others] ★1128
secretion, obstruction affects intestinal activity, [Mann] ★722
BILE DUCTS: See also Gallbladder; Liver
inflammation, mild hyperbilirubinemia in, [Johnson & Bockus] ★729; (discussion) 737
BILHARZIASIS: See Schistosomiasis
BILIARY TRACT colic attack or coronary occlusion? 985
paratyphoid A infection (refractory), 1315
BILIRUBIN in Blood: See Blood
BILLINGS (Frank) Lecture: See Lectures
BINOCULARS, U. S. Navy needs, 200
BIOCHEMISTRY, *Archives of Biochemistry*, 776
BIOLOGIC PRODUCTS: See also Serum; Toxoid (cross reference); Vaccine
Army leases Michigan's laboratories to make, 1224
medical aid from South Africa for Russia, 275
no more in syringes, 138
BIOLOGY, experimental, Federation of American Societies, cancels meeting, 205
International Conference of Biological Cycles (1st), 776
BIOPSY: See Kidneys; Muscles, pectoral; Prostate
BIOTIN, egg white treatment of cancer, 92; (also its assay) [Rhoads & Abels] ★1261
in cancerous tissues, 519—E
metabolism in man, [Oppe] 977—ab
structure determined by du Vigneaud, 54—E
BIRDS stomach gives information on their food (weed seed; pests; etc.) 573—ab
BIRTH: See also Labor
in hospitals vs. at home, ★1013; ★1017; ★1018; 1092—E
Premature: See Infants, premature
Rate: See Vital Statistics
respiratory patterns, 1354—E
Stillbirth: See Stillbirth
BIRTH CANAL, nerve supply, [Hingson & Edwards] ★225; ★227
BIRTH CONTROL, contraceptives, (Council discusses) 838
law, Supreme Court refuses to assume jurisdiction on validity, D. C., 530
Planned Parenthood Federation of America, (annual dinner) 448
BITES: See Mosquitoes; Rat-Bite Fever
Chiggers: See Trombidiosis
BLACK dermographism, [Urbach & Pillsbury] ★485
Tablets for Kidneys, Bladder and Ureters, 618—BI
BLACKHEAD: See Comedo
BLACKOUTS, road accidents in 1942, England, 963
vehicle identification, OCD letter no. 111, 1226
BLACKWATER FEVER: See Hemoglobinuric Fever
BLADDER: See also Urinary System
Black Tablets for, 618—BI
Calculi from Sulfonamide Compounds: See Urinary System, calculi
cancer, ureter transplanted into sigmoid for, [Jewett] 375—ab
cystostomy for urethra rupture, [Roccatagliata] 1182—ab
inflammation, p-chloro-xylenol solution injection for, 779
obstruction of neck: female obstructing prostate, [Folsom & O'Brien] ★573
BLANKETING a casualty, British method, 1226
BLAST: See Bombs
BLASTOMYCES, meningitis from, [Skogland] 1179—ab
BLEEDING: See Hemorrhage
BLENNORRHEA, inclusion, in infant, [Brown; Adams] 1244—ab
BLEPHAROCONJUNCTIVITIS: See Eyelids
BLINDNESS: See also Nerves, optic atrophy; Vision; Medicolegal Abstracts at end of letter M
American war blinded cared for at St. Dunstan's, England, 613; 1172
American war blinded, plans for; no. in World War I, 1222—E
Color: See Color Blindness
etiology, optic atrophy from arsenicals, [Longley] 543—ab
industrial amblyopia, [Bonsib] 850—ab
industrially blind: employment, [Harvey & Luongo] ★105; ★106; 681—E; [Bartle] ★1002
National Society for Prevention of, (tonometer station) 140
BLOND factor in burn produced by ultraviolet rays, (Council report) ★515
BLOOD, arsenic in, after multiple injections of mapharsen in syphilis, [Siegel] 458—ab
Bacteria in: See Bacteremia; Septicemia
Bank: See Blood Transfusion
bilirubin in heart disease, [Chávez & others] ★1277
bilirubin, mild hyperbilirubinemia in gastrointestinal patients, [Johnson & Bockus] ★729; (discussion) 737
carotene, hypercarotenemia, skin xanthochromia from, [Yepes Cadavid] 708—ab
Cells: See also Erythrocytes; Leukocytes
cells count in mapharsen treatment, [Astrachan & Cornell] ★749
cholesterol in healthy infants, in dystrophy and toxicosis, [Ricketts] 793—ab
Circulation: See also Blood Pressure; Cardiovascular System; Kidneys; Pulse; Vasomotor System
circulation, intravascular agglutinations in avian malaria, 263—E; (replies: work done by Dr. Knisely et al at U. of Tennessee, not at Chicago) [Nash, Knisely] 885—C

BLOOD—Continued
Circulation, Portal: See Portal Vein
circulation (supernormal) in resting subjects, [Starr] 1111—ab
circulation time and papaverine, [Elek] 888—ab
circulatory adjustments in spinal anesthesia, [Papper & others] ★27
Clot: See Blood coagulation; Thrombosis
Coagulation: See also Blood prothrombin
coagulation, heparin response as clotting test, [de Takats] 1246—ab
coagulation, pectin effect on, [Isaacs] 1306—ab
coagulation, Weltmann band in myocardial infarction, [Delaney] 371—ab
concentration, value in early diagnosis of shock, [Royster] 790—ab
Conservation: See Blood Transfusion
Convalescent, Treatment: See Pneumonia, atypical; Serum, convalescent (cross reference)
Count: See Blood cells
culture for pneumococcus, add para-aminobenzoic acid to, [Flippin & others] ★235
Donors: See Blood Transfusion
Dried: See Blood Transfusion
Dyscrasia: See also Agranulocytosis, Acute; Anemia; Leukemia; Polycythemia
dyscrasia from sulfapyridine, sulfathiazole and sulfadiazine, [Dowling & Lepper] ★1193
Flow: See Blood circulation
groups, Rh agglutinogen, [Fisk] 541—ab
groups, Rh factor, clinical significance, [Boorman] 625—ab
groups, Rh factor, hemolytic transfusion reactions due to, [Diamond] 463—ab
Hemoglobin: See Hemoglobin
Infection: See Bacteria; Septicemia
J-W-D Blood Purifier, 369—BI
lipase (serum) test in pancreas disorders, [Johnson] 1177—ab
Loss of: See Hemorrhage
Menstrual: See Menstruation
phosphatase (serum "acid") in prostate cancer [Sullivan] 79—ab
pigments, use in wound healing, 1237
Plasma: See under various headings of Blood; Blood Transfusion; Serum
Platelets: See also Purpura, thrombopenic
platelets, counting thrombocytes, [Meister] 158—ab
platelets, thrombocyte deficit test in vascular stasis, [Maynard & Hollinger] ★1194
Preserved: See Blood Transfusion
Pressure: See BLOOD PRESSURE
proteins, amino acids to maintain, [Altshuler & others] ★163
proteins, hypoproteinemia in portal cirrhosis, [Greene] ★715
proteins (plasma) storage, [Beattie] 377—ab
proteins (plasma) variation in surgery, [Casten] 1247—ab
proteins (radioactive plasma) to study "lost plasma" theory, 1354—E
Prothrombin: See also Blood, coagulation
prothrombin level reduction vs. prothrombin time reduction, [Saphir] 1304—C
prothrombin (plasma) during sulfonamide therapy, [Kapnick] 790—ab
pyruvic acid after exercise, [Yanof] 1308—ab
sedimentation and bromsulphalein retention test, [Stiles] 374—ab
sedimentation (erythrocyte): technic of 5 tests: Rourke-Ernstene, Wintrobe-Landsberg, Westergren, Linzenmeier, Cutler, 797
Serum: See various subheads under Blood; Blood Transfusion; Serum
Spitting Up: See Hemoptysis
Substitutes: See under Blood Transfusion
Sugar: See also Diabetes Mellitus
sugar, cholecystohepatohyperglycemic-glycosuric syndrome, [Portis] ★734
sugar, fatal hypoglycemia, pathologic changes in brain, [Lawrence] 792—ab
sugar high and hypoglycemia in workers, lunches for, [Wilder] 871—ab
sugar, hypoglycemia, role of continued vagal stimulation, [Portis & Zitman] ★569
Sugar, Hypoglycemic Shock Treatment: See Insulin shock
sulfonamide concentration curves after its hypodermic use, [Taplin & others] ★314
sulfonamide concentration in dysentery treatment, [Smyth & others] ★1325
sulfonamide concentration, relation to renal calculi, [Dowling & Lepper] ★1192
sulfonamides, its sodium salts orally, (Council report) ★1008
Transfusion: See BLOOD TRANSFUSION
Types: See Blood groups
vitamin A (plasma level) in liver disease, [Popper] 1413—ab
vitamins in, methods for detecting, [Kruse] ★670
Volume: See Blood circulation
BLOOD PRESSURE after nephrectomy, [Kretschmer] ★175; ★476
high, after metrazol shock therapy, [Menninger] 1248—ab
BLOOD PRESSURE—Continued
high, and cardiac rupture, [Edmondson] 888—ab
high, blood pyruvic acid after exercise in, [Yanof] 1308—ab
high, contrast angiocardiography in, [Taylor & McGovern] ★1270
high essential, renal blood flow and glomerular filtration vs. outside temperature, [Byfield & others] ★118
high essential, renal function in grouped subjects, [Dalton] 623—ab
high, etiologic role of gynecologic lesions, [Everett] 787—ab
high, fluctuations without drug intervention, 519—E
high, in those past 40, [Master & others] ★1251
high, kidney extract in, [Jablons] 389—ab
high malignant; danger of protein fever therapy, [Taylor & Page] ★754
high, prognosis, [Daley & others] ★383
high, relation to vascular disease; renal biopsies, [Castleman & Smithwick] ★1256; 1286—E
high, surgical treatment, [Bartels] 286—ab
high, thiocyanate for, [Cavinese] 787—ab
high, ultraviolet rays for, (Council report), ★1256
high, yohimbine effect on, 1315
hyperactive vasodepressor carotid sinus reflex, [Sigler] 623—ab
in streptococcic sore throat, [Bloomfield & Rantz] ★317
increase, with adrenal pheochromocytoma, [Engel] 786—ab
kidney extracts effect on, [Schales] 977—ab
low, during high spinal anesthesia, [Papper & others] ★27
lowering, Wiel Garlic Tablets, 884—BI
old age and, [Howell] 545—ab; [Master & others] ★1251
perinephritis effect on, [Braasch] 79—ab
reaction (250/140) to mecholyl chloride, [Spitz] 302
seasonal changes in, [Paul] 87—ab
BLOOD TRANSFUSION, blood bank, (Bonfils, Colo.) 1100; (U. of Vermont) 1235
blood bank (exchange), New York, 1102
blood bank; plasma for civilian defense, 137
blood bnak, Eerum-Plasma Center, Iowa, 1403
blood banks, number of hospitals having, ★1009
donor, iron effect on hemoglobin regeneration, [Barer] 1309—ab
donor, regulations govern, N. Y., 876; 947—E
donor, syncope in, [Poles] 546—ab
donor, tests for syphilis in; if positive notified by hospital, [Frye & others] ★182
filaria transmitted by? 1250
in renal disease, [Chukanova] 1114—ab
jaundice 1 to 4 months after transfusing plasma or blood, [Beeson] ★1332
New York standards to safeguard blood products for, 876; 947—E
of conserved blood, [Battaglia] 793—ab; [Kiyashev] 1114—ab
of leukemic blood in agranulocytosis, [Rybakov] 710—ab
plasma and serum in shock, [Levinson] 1180—ab
plasma, course on using, New York, 363; 1170
plasma, fate of [Beattie] 218—ab
plasma, in hepatic cirrhosis, [Jiménez-Díaz] 86—ab; [Autet] 720—ab
plasma, in shock in physically induced fever therapy, [Pruce] ★935
plasma laboratories, Peruvian physician Dr. Avendano visits, 768
plasma pooled), safety of, 946—E
plasma protein storage, [Beattie] 377—ab
plasma substitute: hydrolyzed protein solution, [Elman & Lischer] ★498
plasma supplies, Civil Air Patrol fly into stricken areas, 601; 953
plasma, toxicity; A and B substances as antigens not haptens, [Aubert] 1241—C
plasma, use in Boston fire disaster, 266; 363
pulmonary edema after, [Gibbon] 78—ab; 463—ab
reactions (hemolytic) due to Rh factor, [Diamond] 463—ab
BLOOD VESSELS: See also Arteries; Capillaries; Cardiovascular System; Vasomotor System; Veins
Cerebral: See Brain
Disease: See also Cardiovascular Disease
disease, relation to hypertensive state; renal biopsies, [Castleman & Smithwick] ★1256; 1286—E
disease, thrombocyte deficit test, [Maynard & Hollinger] ★1194
fragility in internal diseases, [Schaefer] 158—ab
Renal: See Kidneys
roentgenography (contrast) with diodrast, [Taylor & McGovern] ★1270; (Council report) 1351
"spiders," in liver disease and pregnancy; estrogens affect, [Bean] 1412—ab
superficial cornea vascularization from riboflavin, [Sandstead] 624—ab; (correction) 878
BLUE CROSS Plan: See Hospitals, expense insurance
BOARD: See also under specific names as
American Board; State Board
of Health: See Health
of National Consultants, 1399—OS
of Trustees: See American Medical Association
BODANSKY, MEYER, portrait, 204
BODY Build: See Constitution
Fluids: See Fluids
Heat Production: See Metabolism, basal
height and weight as index of nutritional status, [Kruse] ★587
height in adolescent boys, [Schonfeld] ★180
height, ovarian syndrome with decreased stature, [Albright] 786—ab
Temperature: See Fever; Temperature, Body
Weight: See also Body height and weight; Infants, Newborn; Obesity
weight, control, 931—ab
weight, creatinine excretion in women, [Tager] 542—ab
weight (total), muscle percentage of, [Freudenberger] 784—C
BOECK'S Sarcoid: See Sarcoidosis
BOILS: See Carbuncle; Furunculosis
Jericho (Aleppo): See Leishmaniasis
BOMBS: See also Air Raids
blast effect due to externally applied pressure wave, [Williams] 376—ab
blast injuries, life jacket to protect, 1220—E
blast injuries, subdural hematoma and effusion result, [Abbott & others] ★664; ★739
light, and small skin injuries, 117—ab
water blast, depth charges and pathologic changes from, [McIntire] 120: ★1137; [Cameron] 121: 376—ab
water blast injuries: abdominal concussion, [Auster & Willard] ★995
water blast injuries (immersion) 679—E; 1220—E
BONE MARROW: See also Myeloma; Osteomyelitis
hyperplasia of megakaryocytes in pneumonia, [Williams] 457—ab
panmyelophthisis after arsphenamine, [Rof Carballo] 86—ab
BONES: See also Cranium; Orthopedics; Osteitis; Osteo—; Spine; and under names of specific bones
Atrophy: See Osteoporosis, posttraumatic
diseases, radioactive substances for, 54—E
Dislocation: See Dislocation
Fractures: See Fractures
grafts, plated osteoperiosteal, [McBride] ★652
identifying human remains (skeleton) in murder trial, new photographic method, 207
lesions, arteriography in, [López Areal] 378—ab
repair of cranial defects, [Pudenz] ★478
syphilis (late), treatment, 552
tuberculosis, tuberculin test in, [Howard] 285—ab
tumors of chest wall, diagnosis; treatment, [Dolley & Brewer] ★1135
wounds infected involving, sulfapyridine and sulfathiazole for, [Heggie] 892—ab
BONNELS blood bank, Colorado, 1100
BOOKS: See also Library; Book Notices at end of letter B
for Russian medical students, 200
rare (Chauncey Leake collection) exhibit at Texas, 1297
tubercle bacilli survival in, [Smith] 285—ab
Vesalius and the Fabrica, [Castiglioni] ★582; (New York Academy celebration) 609; (exhibit at Cleveland Medical Library) 1297
BORDEN Co. prize awarded, 1298
BORNHOLM Disease: See Pleurodynia, Epidemic
BOSTON Cocoanut Grove fire disaster, (blood plasma reserve saves 75 persons) 266; (use of plasma) 363; (statement by R. S. Moulton for National Fire Protection Ass'n) 597—E; (commend Lieut. Comdr. Gould for services) 684
University students to serve as hospital aids, 59
BOTTLES: See Label
BOTULISM in U. S. since 1899; danger of home canning, 1286—E
BOWELS: See Intestines
BOYS: See Adolescence
BRADFORD Laboratories obesity cure, 369—BI
BRADYCARDIA, sinus: (rate below 50; 44 in 2 men) [Wilburne] 700—C
BRAIN: See also Head; Meninges; Microcephaly; Nervous System
blast injuries effect on, 1220—E
blood vessels, sympathetic and parasympathetic nerve supply; stimulation produces vasoconstriction or vasodilatation, 224
concussion, result of blast injuries, [Abbott & others] ★664; ★739
Disease: See Epilepsy
disturbances in aviators during acrobatic flights, [Pescador] 378—ab
edema (acute) after neoarsphenamine, [Espejo] 1182—ab

BRAIN—Continued
electroencephalogram in criminal trials, 64
electroencephalogram in epilepsy, [Finley] 981—ab
Hemorrhage: See also Meninges hemorrhage
hemorrhage (recurrent intracranial) in hemophilia, [Baer & others] ★933
Inflammation: See Encephalitis; Encephalomyelitis; Meningoencephalitis
Injuries: See also Brain, concussion; Brain wounds; etc.
Injuries, Russian All Union Institute discusses, 436; 521
Injuries, streptococcic meningitis after; recovery under sulfapyridine and sulfadiazine, [Riley & Waugh] ★338
malaria (estivoautumnal) in soldier: atabrine cures, [Brill & Pellicano] ★1150
pathologic changes in fatal hypoglycemia, [Lawrence] 792—ab
pigmentation from old stab wound of cord, [Jones] ★1004
potassium phosphate administered directly into, for shock, [Stern] 545—ab
respiratory patterns at birth, 1354—E
surgery, mesencephalic tractotomy for pain, [Walker] 458—ab
surgery, prefrontal leukotomy in melancholia, dementia precox, etc., [McGregor] 466—ab
surgery, prefrontal lobotomy; surgical relief of mental pain, [Freeman] 459—ab
Syphilis: See Neurosyphilis
tuberculosis, [Voto-Bernales] 86—ab
wounds (gunshot), papilledema in, [Murzin] 710—ab
BRASS, black dermographism from, [Urbach & Pillsbury] ★485
BRAZIL, National Yellow Fever Service, report, 963
BRAZILIAN medical observers at Carlisle Barracks, 137
BREAD: See also Bakers
made with skimmed milk, nutritive value, [Williams & others] ★943
BREAKFAST: See under Food
Foods: See Cereal Products
BREAST cancer, research in rats, England, 962
cancer, results of treatment, [Haagensen] 704—ab
cancer, simple and radical mastectomy; pre- and postoperative irradiation, [Adair] ★553
cancer, treatment with egg white and avidin, [Rhoads & Abels] ★1261
Feeding: See Infants, feeding: Lactation
Glamo-Form Products bust developer, 146—BI
hypertrophy in adolescent boys, [Schonfeld] ★182
hypertrophy in male syndrome, [Klinefelter] 152—ab; (correction) 548
Milk: See Milk, human
Nursing: See Lactation
painful engorged, dicthylstilbestrol for, [Abarbanel & others] ★1124; ★1125
Surgery: See Breast cancer
BREATHING: See Inhalation; Respiration
BREWERS' Yeast: See Yeast
BRICKNER Lecture: See Lectures
BRIGHT'S Disease: See Nephritis
BRILLIANTINE, effect on growth of hair, 1116
BRITISH: See also England; Royal; World War
Army: See World War
colonial rule, medical benefits to natives under, 695
Empire Cancer Campaign report, 962
Medical Association, (planning for postwar medical care), 130—E; 142; 1299
Medical Students Association, (first meeting) 1104
Orthopedic Association cooperates with Empire Rheumatism Council, 963
Periodicals: See under Journals
Pharmacopeia: See Pharmacopeia
BROADCASTING: See Radio
BROMIDE: See also Methyl Bromide
Catawba's Nervine, 280—BI
BROMOSULPHALEIN: See Liver function tests
BRONCHI: See Bronchus
BRONCHIAL Asthma: See Asthma
BRONCHOGRAPHY, sensitivity to cocaine and iodine before, 1250
BRONCHOPNEUMONIA, atypical, of unknown etiology, [Keefer] ★806
treatment, physiologically directed, [Barach] 287—ab
BRONCHUS: See also Bronchography; Bronchopneumonia
cancer, diagnosis; treatment, [Dolley & Brewer] ★1134
diphtheria (primary), rare location, 66
disease in infants, sulfonamide for, [del Carril] 868—ab
factor in pulmonary embolism, [Jesser] 82—ab
mucosa changes in asthma, 898
obstruction (nondiphtheritic infections), tracheotomy for, [Neffson] 624—ab
spasm, vaporized solutions of epinephrine and neosynephrine hydrochloride for; New York Academy report, ★759
BROOKLYN, epidemic pleurodynia in, [Howard & others] ★925
BROWN, WALTER EARL, reported missing in action, 532
BRUCELLERGEN skin test for brucellosis, [Borts & others] ★319
BRUCELLIN treatment of brucellosis, [Borts & others] ★319
BRUCELLOSIS, diagnosis, criteria for, [Griggs] 292—ab
epidemic, porcine type in raw milk, diagnostic tests; treatment, [Borts & others] ★319
genital, in refrigerator meat plant workers, [Purriel] 1417—ab
mediastinal glands in, [Martin] 705—ab
serodiagnosis, [Badoux] 1312—ab
BRUNET factor in burn from ultraviolet rays (Council report) ★515
BRUSHING, effect on growth of hair, 1116
BUBBLE Bath: See Baths
BUCHANAN Foundation: See Foundations
Medal: See Prizes
BUGS: See Assassin Bugs; Bedbugs
BULLET lodged in sphenoid sinus, lead poisoning; submucous resection, [Futch] ★580
Wounds: See Wounds, gunshot
BULLETIN: See Journals
BUMED: See Journals
BUONANNO, HORATIO, permanently rejected for licensure, W. Va., 776
BUREAU, A. M. A.: See American Medical Association
of Health Education, Puerto Rico, 205
of Hospital Standards: See Hospitals
BURNS: See also Sunburn
chemical: phosphorus, treatment, (correction) 205
fatal, in 1942; National Safety Council report, 694
fatal, to infants in wartime, 263—E
infected, in British Naval personnel, [Heggie] 893—ab
itching from, in child; calamine lotion for, 302
mortality and environmental temperature, 1352—E
superficial, fibrinogen emboli from, 596—E
tissue changes from heat vs. cold, 91
treatment, amino acids, [Altshuler & others] ★165
treatment: Circular Letter No. 15 of Office of Surgeon General, 682
treatment, cod liver oil, (Council report) ★759
treatment, compare folife, tannic acid, cod liver oil, silver nitrate, sulfadiazine [Hamilton] 703—ab
treatment, membranes containing sulfanilamide and azochloramid, [Andrus] 978—ab
treatment, modern, [Richardson] 293—ab
treatment, paper tissue-cod liver oil ointment dressing, [Callahan] 541—ab
treatment, paraffin-sulfanilamide, 300
treatment, plasma, Boston fire disaster, 266, 363
treatment, plastic film: sulfonamide-triethanolamine plus phemerol, [Skinner] 1178—ab
treatment, propamidine, 946—E
treatment, room temperature at 75 F., 1157—E; 1352—E
treatment, sulfadiazine spray, [Coloviras] 459—ab
treatment, sulfonamide film ("new skin"), [Pickrell] 373—ab
treatment, sulfonamide ointments, [Long] 307—ab
treatment, sulfonamide powder, [Rhoads] 81—ab
ultraviolet rays causing: factor of age, sex, pregnancy, coloring, (Council report) ★515
X-Ray: See Roentgen Therapy
BURROUGHS Wellcome & Co., Army-Navy E Award to, 685
BUST Developer: See Breast
BUTCHER: See Meat
BUTTER, consumption per capita, [Stiebeling] ★833; ★836
makers to reserve 30 per cent for direct war requirement, 352
nutritional values, (Council report) 1370—OS
Substitute: See Oleomargarine
BUTTOCKS, acne conglobata and perianal pyoderma, low fat diet and thyroxin for, [Sutton & Marks] ★1344
tumoral calcinosis, [Inclan] ★490
BUTYL stearate, cleansing agent for Halowax dermatitis, [Morris & Tabershaw] ★192
BUZZARD, EDWARD F., retires, 1103

BOOK NOTICES

Abdomen, Injuries: Military Surgical Manuals, 795
Absorption Spectra, Application of, 983
Alaska, Time of My Life: A Frontier Doctor in Alaska, 1201: 1442
Alcohol, Effects on the Individual. Alcohol Addiction and Chronic Alcoholism, 298
Ambulance Handbook, First Aid to the Injured and Sick, 160
American Consumption Levels: Standard of Living in 1860, 795
American Medical Association, Food Charts, 89
New and Nonofficial Remedies, 1942, 221
Amino, Aromatic, Toxicity and Potential Dangers, 711
Andrews, A. H., Jr., Manual of Oxygen Therapy Techniques, Including Carbon Dioxide, Helium and Water Vapor, 1183
Anesthesia, Local, Massage and Manipulation, 90
Recent Advances in Anaesthesia and Analgesia, 1313
Antihormone Problem, Antigonadotropic Factor, 1313
Appendicitis crónica, 550
Army Medical Museum, Atlas of Ophthalmic Pathology, 895
Athletics, How to Be Fit, 379
Atlas of Gas Poisoning, 712
of Ophthalmic Pathology, 895
of Ovarian Tumors, 984
Bacteriology, Microbiology of Meats, 894
Silent Enemies: Story of Diseases of War and Their Control, 795
Texto de bacteriologia, 1184
Bailey, H., editor, Surgery of Modern Warfare, 549
Bakwin, R. M., Psychologic Care During Infancy and Childhood, 984
Bandaging, Handbook of, 160
Barzilai, G., Atlas of Ovarian Tumors, 984
Bauer, J., Constitution and Disease, 628
Bauer, W., Changes in the Knee Joint at Various Ages, 469
Bauer, W. W., Eat What You Want! 160
Beaumont, G. E., Recent Advances in Medicine, 550
Beck, A. C., Obstetrical Practice, 983
Bellilos, A. D., First Aid and Bandaging: Handbook, 160
Belou, Pedro, Homenaje al Profesor Pedro Belou, 712
Bennett, G. A., Changes in Knee Joint at Various Ages, 469
Berkeley, C., editor, Diseases of Women, 795
Bernard, Claude, creador de la medicina cientifica, 90
Bernheim, B. M., Adventure in Blood Transfusion, 549
Bevelander, G., Outline of Histology, 380
Bicknell, F., Vitamins in Medicine, 1418
Biochemistry and Morphogenesis, 1183
Laboratory Directions in, 1418
Biology, Action of the Vitamins, 1313
of the Negro, 1116
Blood Substitutes and Blood Transfusion, 894
Transfusion, Adventure in, 549
Bolles, M. M., Personality and Sexuality of the Physically Handicapped Woman, 297
Borkin, J., Germany's Master Plan: Story of Industrial Offensive, 895
Bourne, A. W., Recent Advances in Obstetrics and Gynaecology, 628
Boyd, W., Surgical Pathology, 711
Boyd, W. C., Fundamentals of Immunology, 983
Brain Injuries in War; Aftereffects of, 159
tumors, Roentgen Treatment of, 550
British: See Great Britain
Brunschwig, A., Surgery of Pancreatic Tumors, 550
Burke, E. T., Modern Treatment of Venereal Diseases, 469
Bustos, F. M., Apendicitis crónico, 550
Cancer, Lymph Node Metastases: Incidence and Surgical Treatment, 298
Canning, Home Canning for Victory, Also Preserving, Pickling and Dehydrating, 794
Carbon Dioxide, Manual of Oxygen Therapy Techniques Including, 1183
Carstens, Mary, in Medical School, 380
Castor Oil and Quinine: Once a Doctor, Always a Doctor, 159
Chemical Warfare, Medical Manual, 712
Chemistry: See also Biochemistry; Drugs; Pharmacology
Practical Survey of, 628
Children: See also Pediatrics
Development of Aphasia in Educationally Retarded, 712
Growing Up in a World at War, 711
Psychologic Care, 984
Civilian Health in Wartime, 298
Climate Makes the Man, 1314
Clinical Medicine, Paginas clínicas, 1314
Thermometers, 222
Cobb, W. M., First Negro Medical Society: Medico-Chirurgical Society of District of Columbia, 1884-1939, 159
Collen, M. F., editor, Los Angeles County Hospital, House Staff Manual, 90
Connecticut State Medical Journal, Essentials of Emergency Treatment, 550
Constitution and Disease: Applied Pathology, 628
Cook, F., editor, Diseases of Women, 795
Cookbook, Home Canning for Victory, 794
Just for Two: Handbook of Cookery for Small Household, 794
Manual for Managers of Rural and Other Small Lunchrooms, 1418
Sweets Without Sugar, 794
Cooperative Medicine, Problem of, 160
Corner, G. W., Hormones in Human Reproduction, 794
Crabtree, E. G., Urological Diseases of Pregnancy, 627
Crohn, B. B., Understand Your Ulcer, 1184
Culbertson, J. T., Medical Parasitology, 160
Curbelo y Hernandez, A., Texto de bacteriologia, 1184
Curtis, D. A., Emergency Care, 90
Cutler, C. W., Jr., Hand: Its Disabilities and Diseases, 895
Cyriax, J., Massage, Manipulation and Local Anaesthesia, 90
Dake, H. C., Ultra-Violet Light and Its Applications, 222

Book Notices—Continued
Davidoff, L. M., Roentgen Treatment of Diseases of Nervous System, 550
Davidsohn, I., Curriculum for Schools of Medical Technology, 1115
DeCoursey, E., Atlas of Ophthalmic Pathology, 895
Dehydrating, Home Canning for Victory, 794
Dembo, L. H., editor, Therapeutics of Infancy and Childhood, 794
De Ment, J., Ultra-Violet Light and Its Applications, 222
Dentistry, Histology and Embryology, 380
Dermatology, Practical Survey of Chemistry and Metabolism of the Skin, 628
Diet: See also Cookbook; Food; Nutrition; Vitamins
Eat What You Want! Sensible Guide to Good Health Through Good Eating, 160
Laboratory Handbook for Dietetics, 1314
Manual Mount Sinai Hospital, Philadelphia, 984
Without Despair, 794
Dieuaide, F. R., Civilian Health in Wartime, 298
Digitalis, Estudio clínico, Técnica del tratamiento, Resultados, 469
Disability, The Hand, 895
Disease, Constitution and Disease, 628
Silent Enemies: Story of Diseases of War and Their Control, 795
Dislocations, Text-Book of, Covering Pathology, Diagnosis, Treatment, 1249
Divertículos idiopáticos del duodeno, 1249
Dodds, E. C., Recent Advances in Medicine, 550
Drugs: See also Chemistry; Pharmacology
New and Nonofficial Remedies, 1942, 221
Products: Labeling, Packaging, Regulation, 221
Text-Book of Pharmacognosy, 894
Duodenum, Divertículos idiopáticos, 1249
Dyke, C. G., Roentgen Treatment of Diseases of Nervous System, 550
Eat What You Want! 160
Embryology, Experimental, Manual of, 895
Human, 1249
Emergency Care, 90
Treatment, Essentials of, 550
Emotions, Revelation of Childbirth, 627
England: See Great Britain
Enzymes, Application of Absorption Spectra, 983
Epilepsy, Contribución al estudio de la epilepsia, 1249
Evans, C. L., editor, Starling's Principles of Human Physiology, 550
Evans, E. A., Jr., editor, Biological Action of Vitamins, 1313
Exercises, How to be Fit, 379
Eyes: See Ophthalmology
Fabricant, N. D., Nasal Medication, 470
Fertility, Urban, Group Differences in, Study Derived from National Health Survey, 298
Fiction, Her Star in Sight: Mary Carstens in Medical School, 380
His Sword: Tale of the Vikings, 380
Horses of the Sun, 984
Filene (Edward A.) Good Will Fund, Inc., Problem of Cooperative Medicine, 160
First Aid, Handbook of, 160
to the Injured and Sick: Advanced Ambulance Handbook, 160
Fitch, W. K., Gas Warfare: A Monograph for Instructors, 983
Fluorescence, Ultra-violet Light and Its Applications, 222
Foglio, J., La toracoplastía ántero-lateral clásitica Monaldi, 1314
Food: See also Cookbook; Diet; Nutrition; Vitamins
Charts: Foods as Sources of the Dietary Essentials, 89
Control in Great Britain, 1115
Manual for Managers of Rural and Other Small School Lunchrooms, 1418
You Eat: Practical Guide to Home Nutrition, 794
Fractures, Text-Book of, covering Pathology, Diagnosis, Treatment, 1249
Fraenkel, M., Housekeeping Service for Chronic Patients, 160
Freud's theory of Instincts, Psychoanalytic Theory of Libido, 297
Fuel, Heating Your Home in Wartime, 1184
Garreton Silva, A., La digital, 469
Garrod, L. P., Recent Advances in Pathology, 712
Gas Poisoning, Atlas of; Chemical Warfare, 712
War Gases: Identification and Decontamination, 711
Warfare: A Monograph for Instructors, 983
Gastrointestinal Tract, Diseases of, 895
Geist, S. H., Ovarian Tumors, 1115
Germany's Master Plan: Story of Industrial Offensive, 895
Glasstone, S., Food You Eat, 794
Goldberger, M. A., Gynecologic Surgery, 895
Goldstein, K., Aftereffects of Brain Injuries in War, 159
Gonadotropins, Antigonadotropic Factor, 1313
Gonorrhea, Bienorragia y sulfamidas, 379
Gould, A. G., Manual of War-Time Hygiene, 298
Great Britain, Food Control in, 1115
Memoranda on Medical Diseases in Tropical and Sub-Tropical Areas, 712
Greenhie, M. B., Art of Living in Wartime, 1418
Gregg Medical Shorthand Manual, 160
Growing Up in a World at War, 711
Grunderman, F. M., Tobacco and Health: Some Facts About Smoking, 1418
Guitarte, M. S., Divertículos idiopáticos del duodeno, 1249
Gynecology, Diseases of Women, 795
Gynecologic Surgery, 895
Recent Advances in, 628
Hadfield, G., Recent Advances in Pathology, 712
Hall, M. F., Public Health Statistics, 90
Hamburger, V., Manual of Experimental Embryology, 895
Hammer, N., editor, First Aid to the Injured and Sick, 160
Hand, Its Disabilities and Diseases, 895
Handicapped Woman, Personality and Sexuality of, 297
Health: See also Hygiene; Mental Hygiene
Civilian Health in Wartime, 298
Education, Radio Broadcasting, 1183
Health and Religion, 984
Health and Tobacco: Some Facts About Smoking, 1418
How to be Fit, 379
Louisiana State Dept. of, Sanitary Inspector's Manual, 1184
National Health Survey, Group Differences in Urban Fertility, 298
Personal and Community Health, 380
Public Health and Preventive Medicine, 895
Public Health Statistics, 90
Venture in Public Health Integration, 1941
Health Education Conference of New York Academy, 894
Heart, La digital, 469
Heating Your Home in Wartime, 1184
Helium, Manual of Oxygen Therapy Techniques Including, 1183
Her Star in Sight: Mary Carstens in Medical School, 380
Herrick, A. D., Drug Products: Labeling, Packaging, Regulation, 221
Hewer, C. L., Recent Advances in Anaesthesia and Analgesia (Including Oxygen Therapy), 1313
Hill, J., Silent Enemies, 795
Hiltner, S., Religion and Health, 984
His Sword: Tale of the Vikings, 380
Histology, Outline of, 380
Hormones, Antigonadotropic Factor, Antihormone Factor, 1313
Application of Absorption Spectra to, 983
in Human Reproduction, 794
Horses of the Sun, 984
Hoskins, M. M., Outline of Histology, 380
Hospital, Los Angeles County, House Staff Manual, 90
Mount Sinai, Diet Manual, Philadelphia, 984
Presbyterian, New York, History of the School of Nursing, 1892-1942, 89
This is My Life (account of Boschurch Home orthopedic hospital), 379
Housekeeping Service for Chronic Patients, 160
How to be Fit, 379
Hueper, W. C., Occupational Tumors and Allied Diseases, 297
Hunt, A., This is My Life (account of Boschurch Home orthopedic hospital), 379
Hygiene: See also Health; Mental Hygiene
War-Time, Manual of, 298
Hyperthyroidism, Do hipertireoidismo e seu tratamento, 628
Iacaparro, G., Bienorragia y sulfamidas, 379
Immunology, Fundamentals of Immunology, 983
Industry, Aromatic Amino and Nitro Compounds, Toxicity and Potential Dangers, 711
Chronic Pulmonary Disease in South Wales Coalminers, 298
Germany's Master Plan, 895
1942 Year Book of Industrial and Orthopedic Surgery, 1249
Occupational Tumors and Allied Diseases, 297
Psychology of Supervising the Working Woman, 895
Infants: See Children; Pediatrics
Institute for Psychoanalysis, Growing Up in a World at War, 711
Insua y Cartaya, G., Texto de bacteriologia, 1184
Izquierdo, J. J., Bernard, creador de la medicina científica, 90
Jacoba, M. B., War Gases, 711
Jacobson, E., You Must Relax, 297
Jellinek, E. M., editor, Effects of Alcohol on Individual, 298
Jensen, L. B., Microbiology of Meats, 894
Johnston, P. W., Relation of Certain Anomalies of Vision to Reading Disability, 1313
Joints, Changes in the Knee Joint at Various Ages, 469
Jones, Sir Robert, This is My Life (Hunt), 379
Just for Two: Handbook of Cookery, 794
Kahn, M. C., Public Health and Preventive Medicine, 895
Karsner, H. T., Human Pathology, 549
Kiphuth, R., How to be Fit, 379
Kiser, C. V., Group Differences in Urban Fertility, 298
Knee Joint, Changes in, at Various Ages, 469
Krafka, J., Jr., Human Embryology, 1249
Krug, E. E., Introduction to Materia Medica and Pharmacology, 470
Labor, Revelation of Childbirth, 627
Laird, D. A., Psychology of Supervising the Working Woman, 895
Landis, C., Personality and Sexuality of Physically Handicapped Woman, 297
Lanford, C. S., Essentials of Nutrition, 984
Laws, Drug Products: Labeling, Packaging, Regulation, 221
Lectures, Vanuxem, Hormones in Human Reproduction, 794
Lee, E., History of School of Nursing, Presbyterian Hospital, New York, 89
Lemos Torres, U., Do hipertireoidismo e seu tratamento, 628
Lewis, J. H., Biology of the Negro, 1115
Libido, Psychoanalytic Theory of, 297
Linhares, H., Pesquisas sobre a febre amarela, 1314
Litchfield, H. R., editor, Therapeutics of Infancy and Childhood, 794
Living, Art of, in Wartime, 1418
Standard of in 1860: American Consumption Levels, 795
Livingood, C. S., Manual of Dermatology. Military Medical Manuals, 379
Los Angeles County Hospital, House Staff Manual, 90
Lunchrooms, small, Manual for Managers of, 1418
Lungs, Chronic Disease in South Wales Coalminers, 298
Lymph Node Metastases, 298
McGuigan, H. A., Introduction to Materia Medica and Pharmacology, 470
MacMeeken, M., Developmental Aphasia in Educationally Retarded Children, 712
Maisel, A. Q., Miracles of Military Medicine, 1115
Markowitz, M., Practical Survey of Chemistry and Metabolism of Skin, 628
Martin, E. W., Standard of Living in 1860, 795
Massage, Manipulation and Local Anaesthesia, 90
Materia Medica: See Pharmacology
Meals, Preparation: See Cookbook
Medical History, First Negro Medical Society, 159
Standard of Living in 1860, 795
Medical Research Council, Chronic Pulmonary Disease in South Wales Coalminers, 298
Report of Committee on Tuberculosis in War-Time, 221
Medicine, cooperative, Problem of, 160
Military: See War
Recent Advances in, 550
Vitamins in, 1418
Medico-Chirurgical Society of District of Columbia, 1884-1939, 159
Meese, M. F., Her Star in Sight: Mary Carstens in Medical School, 380
Mencher, W. H., Urology, 895
Mendoza, L., Jr., Paginas clínicas, 1314
Mental Hygiene, You Must Relax, 297
Art of Living in Wartime, 1418
Military: See War
Mills, C. A., Climate Makes the Man, 1314
Miners, Chronic Pulmonary Disease in South Wales Coalminers, 298
Minnesota Resources Commission: Heating Your Home in Wartime, 1184
Moritz, A. R., Pathology of Trauma, 89
Morphogenesis and Biochemistry, 1183
Morton, R. A., Application of Absorption Spectra, 983
Mount Sinai Hospital, Philadelphia, Diet Manual, 984
Mudd, S., editor, Blood Substitutes and Blood Transfusion, 894
Muller, A. C., His Sword: Tale of the Vikings, 380
Myers, V. C., Laboratory Directions in Biochemistry, 1418
Nathanson, I. T., Lymph Node Metastases, 298
National Bureau of Standards, Clinical Thermometers, 222
National Health Survey, Group Differences in Urban Fertility, 298
National Research Council, Abdominal and Genito-Urinary Injuries, Military Surgical Manuals, 795
Food Charts, 89
Manual of Dermatology. Military Medical Manuals, 379
Relation of Certain Anomalies of Vision to Reading Disability, 1313
Needham, J., Biochemistry and Morphogenesis, 1183
Negro, Biology of, 1115
History of Medico-Chirurgical Society of the District of Columbia, 1884-1939, 159
Nervous System, Diseases of, Roentgen Treatment of, 550
New and Nonofficial Remedies, 221
New York Academy of Medicine, 1941 Health Education Conference of, Venture in Public Health Integration, 894
Nitro Compounds, Toxicity and Potential Dangers, 711

Book Notices—Continued
Nose, Nasal Medication, 470
Novels: See Fiction
Nursing, History of School of, Presbyterian Hospital, New York, 89
Nutrition: See also Diet; Food; Vitamins
Essentials of, 984
Obstetrics, Obstetrical Practice, 983
Recent Advances in, 628
Ohlson, M. A., Laboratory Handbook for Dietetics, 1314
Ohio Dietetic Association, Manual for Managers of Rural and other Small Lunchrooms, 1418
Old Age, Housekeeping Services for Infirm Aged, 160
Ophthalmology, Atlas of Ophthalmic Pathology, 895
Relation of Certain Anomalies of Vision and Lateral Dominance to Reading Disability, 1313
Vertebrate Eye and Its Adaptive Radiation, 1314
Orthopedics, Changes in the Knee Joint at Various Ages, 469
1942 Year Book of Industrial and Orthopedic Surgery, 1249
Text-Book of Fractures and Dislocations, 1249
This is My Life (account of Boschurch Home orthopedic hospital), 379
Ovary, Atlas of Tumors, 984
Tumors, 1115
Oxygen Therapy, Manual of, 1183
Therapy, Recent Advances in Anaesthesia including, 1313
Painter, C. F., editor, 1942 Year Book of Industrial and Orthopedic Surgery, 1249
Pancreas, Surgery of Pancreatic Tumors, 550
Parasitology, Introduction to, 159
Medical, 160
Pastoral Medicine, Religion and Health, 984
Pathology, Applied Constitutional, 628
Human, 549
of Trauma, 89
Ophthalmic, Atlas of, 895
Recent Advances in, 712
Surgical, 711
Patients, chronic, Housekeeping Services for, 160
Pearse, A. S., Introduction to Parasitology, 159
Pediatrics: See also Children
Therapeutics of Infancy and Childhood, 794
Peptic Ulcer, Understand Your Ulcer, 1184
Personality and Sexuality of Physically Handicapped Woman, 297
Pharmacognosy, Text-Book of, 894
Pharmacology: See also Chemistry; Drugs
Introduction to Materia Medica and, 470
Physicians, biography: Castor Oil and Quinine (Dr. Vandegrift), 159
biography: Making of a Surgeon: A Midwestern Chronicle (Dr. E. V. Smith), 380
women, Her Star in Sight: Mary Carstens in Medical School, 380
Physiology, Starling's Principles of, 550
Pierce, A., editor, Home Canning for Victory, 794
Pillsbury, D. M., Manual of Dermatology. Military Medical Manuals, 379
Plants, Text-Book of Pharmacognosy, 894
Population, Group Differences in Urban Fertility, National Health Survey, 298
Pregnancy, Revelation of Childbirth, 627
Urological Diseases of, 627
Presbyterian Hospital, New York, History of Nursing, 89
Prescott, F., Vitamins in Medicine, 1418
Preventive Medicine and Public Health, 895
Prostate hypertrophy, Internal Secretion of Germinal Tissue of the Testes and, 159
Psychiatry, Fundamentals of, 380
Psychoanalysis, Introduction to Theory of the Libido, 297
Care During Infancy and Childhood, 984
Psychology of Supervising Working Woman, 895
Public Health: See Health
Radiation, Vertebrate Eye and Its Adaptive Radiation, 1314
Radio Broadcasting: Critical Study of Health Education, 1183
Read, G. D., Revelation of Childbirth, 627
Reading disability, Relation of Certain Anomalies of Vision and Lateral Dominance to, 1313
Relaxation, You Must Relax, 297
Religion and Health, 984
Reproduction, Hormones in, 794
Research Council on Problems of Alcohol, Effects of Alcohol on the Individual, 298
Roentgenology, Roentgen Treatment of Diseases of Nervous System, 550
Rolmiser, L., Contribución al estudio de la epilepsia experimental en el hombre, 1249
Sanitary Inspector's Manual, Louisiana State Health Dept., 1184
Schools, Manual for Managers of small lunchrooms, 1418
of Medical Technology, Curriculum for, 1115
Sex, Hormones in Human Reproduction, 794
Introduction to Psychoanalytic Theory of the Libido, 297
Personality and Sexuality of Physically Handicapped Woman, 297
Sherman, H. C., Essentials of Nutrition, 984
Shorthand, medical, Gregg Manual, 160
Silent Enemies: Story of the Diseases of War and Their Control, 795
Skin: See Dermatology
Smiley, D. F., Manual of War-Time Hygiene, 298
Smith, A. E., editor, New and Nonofficial Remedies, 1942, 221
Smith, E. V., Making of a Surgeon: Midwestern Chronicle, 380
Smither, E. F., Gregg Medical Shorthand Manual, 160
Societies, Medical, First Negro Medical Society, 159
Spectra, absorption, Application to Vitamins, Hormones and Coenzymes, 983
Speed, K., Text-Book of Fractures and Dislocations, 1249
Spinal Cord, tumors, Roentgen Treatment of, 550
Spink, W. W., Sulfanilamide and Related Compounds in General Practice, 379
Starling's Principles of Human Physiology, 550
Statistics, Public Health, 90
Steinhaus, A. H., Tobacco and Health: Some Facts About Smoking, 1418
Stenography, Gregg Medical Shorthand Manual, 160
Sterba, R., Psychoanalytic Theory of Libido, 297
Strecker, E. A., Fundamentals of Psychiatry, 380
Sulfanilamide and Related Compounds in General Practice, 379
Sulfonamides, Blenorragia y sulfamidas, 379
Sulman, F., Antigonadotropic Factor; Antihormone Problem, 1313
Sulzberger, M. B., Manual of Dermatology. Military Medical Manuals, 379
Surgeon, Making of a Surgeon: A Midwestern Chronicle, 380
Surgery, Abdominal and Genito-Urinary Injuries. Military Surgical Manuals, 795
Gynecologic, 895
1942 Year Book of Industrial and Orthopedic Surgery, 1249
of Modern Warfare, 549
of Pancreatic Tumors, 550
Surgical Pathology, 711
Sweets Without Sugar, 794
Taylor, G. W., Lymph Node Metastases, 298
Technology, medical, Curriculum for Schools of, 1115
Teeth: See Dentistry
Tereshtenko, V. J., Problem of Cooperative Medicine, 160
Testes, Internal Secretion of Germinal Tissue of, 159
Thalhimer, W., editor, Blood Substitutes and Blood Transfusion, 894
Therapeutics, Essentials of Emergency Treatment, 550
Nasal Medication, 470
of Infancy and Childhood, 794
Thermometers, Clinical Recorded Voluntary Standard of the Trade, 222
This is My Life (Agnes Hunt), 379
Thompson, G., Laboratory Handbook for Dietetics, 1314
Thoms, H., editor, Essentials of Emergency Treatment, 550
Thoracoplasty, La toracoplastía ántero-lateral clásica de Monaldi, 1314
Tobacco and Health: Some Facts About Smoking, 1418
Törnblom, N., Internal Secretion of the Germinal Tissue of Testes and Prostatic Hypertrophy, 159
Trauma: See also War; Wounds
Abdominal and Genito-Urinary Injuries, 795
Aftereffects of Brain Injuries in War, 159
Pathology of, 89
Treatment: See Therapeutics
Tropical Medicine, Memoranda on Medical Diseases, 712
Tuberculosis in War-Time, Report of Committee of Medical Research Council on, 221
La toracoplastía ántero-lateral clásica de Monaldi, 1314
Tumors, Occupational, and Allied Diseases, 297
Ovarian, 1115
Surgery of Pancreatic Tumors, 550
Tunstall, A. C., First Aid to the Injured and Sick, 160
Turner, C. E., Personal and Community Health, 380
Ultra-Violet Light and Its Applications, 222
University of Oklahoma, Food You Eat, 794
Urology, 895
Urological Diseases of Pregnancy, 627
Vandegrift, G. W., Castor Oil and Quinine, 159
Vanuxem Lectures, Hormones in Human Reproduction, 794
Venereal Diseases, Modern Treatment of, 469
Vision: See Ophthalmology
Vitamins, Application of Absorption Spectra to, 983
Biological Action of, 1313
in Medicine, 1418
von Oettingen, W. F., Aromatic Amine and Nitro Compounds, 711
Waine, H., Changes in Knee Joint at Various Ages, 469
Wallace, L. H., Just for Two, Handbook of Cookery, 794
Walls, G. L., The Vertebrate Eye and Its Adaptive Radiation, 1314
War, Abdominal and Genito-Urinary Injuries. Military Surgical Manuals, 795
Aftereffects of Brain Injuries in, 159
Art of Living in Wartime, 1418
Civilian Health in Wartime, 298
Food Control in Great Britain, 1115
Gas Warfare: Monograph for Instructors, 983
Gases: Their Identification and Decontamination, 711
Germany's Master Plan: Story of Industrial Offensive, 895
Growing Up in a World at War, 711
Heating Your Home in Wartime, 1184
Manual of Dermatology, 379
Manual of War-Time Hygiene, 298
Medical Manual of Chemical Warfare; Atlas of Gas Poisoning, 1183
Memoranda on Medical Diseases in Tropical and Sub-Tropical Areas, 712
Miracles of Military Medicine, 1115
Office, Memoranda on Medical Diseases on Tropical and Sub-Tropical Areas, 712
Pathology and Treatment of War Wounds, 470
Report of the Committee of Medical Research Council on Tuberculosis, 221
Silent Enemies: Story of the Diseases of War and Their Control, 795
Surgery of Modern Warfare, 549
Warwick, F. J., First Aid to the Injured and Sick, 160
Water Vapor, Manual of Oxygen Therapy Techniques Including, 1183
Welsh, C. J., Germany's Master Plan: Story of Industrial Offensive, 895
White, C., editor, Diseases of Women, 795
White, M., Diet Without Despair, 794
Sweets Without Sugar, 794
Whitten, K. M., Horses of the Sun, 984
Williams, L. H., Recent Advances in Obstetrics and Gynecology, 628
Winkelstein, A., Diseases of Gastro-Intestinal Tract, 895
Wooders, M. A., Emergency Care, 90
Word blindness, Developmental Aphasia in Educationally Retarded Children, 712
Works Progress Administration, Housekeeping Services for Chronic Service, 160
World War II: See War
Wounds: See also Trauma; War
Surgery of Modern Warfare, 549
Wright, A. E., Pathology and Treatment of War Wounds, 470
Year Book of Industrial and Orthopedic Surgery, 1249
Yellow Fever, Pesquisas sobre a febre amarela, 1314
You Must Relax, 297
Youngken, H. W., Text-Book of Pharmacognosy, 894
Zondek, B., Antigonadotropic Factor; Antihormone Problem, 1313

C

C. I. O.: See Industrial Trade Unions
"CABLE RASH" or Halowax dermatitis [Morris & Tabershaw] *192; 471
CADMIUM, Setterlind-Krause dithizone method to determine, 611
CAFFEINE: See Coffee
CALAMINE lotion, prescription for, for itching after burns, 302
CALCIFICATION: See Adrenals
CALCINOSIS, tumoral, [Inclan] *490
CALCIUM: diet for pregnant and lactating women, [Ebbs] *341
deficiency in ordinary mixed diet, 559—ab; [Hinglais] 1417—ab
in Urine: See Urine
Treatment: See Hyperthyroidism
CALCULI: See Gallbladder; Kidneys; Urinary System
CALIFORNIA: See also Los Angeles; San Francisco; Stanford University
Heart Association, (meeting) 1403
Physicians' Service, (expansion) 58—OS; (Kaiser's Permanente Foundation) 595—E
University of: See University
CALKINS, GARY N., death, 363
CALORIES: diet for pregnant and lactating women, [Ebbs] *340
CAMPHOR, ampuls of, consultants' views on value in heart failure, (Council report) 431
CAMPS, Army: See Medicine and the War
CANADIAN Medical Association and compulsory health insurance, 880; (special Council meeting also considers cancer control) 1236; (Medical Service Plans Council organize committee to cooperate with) 1298
CANCER: See also under name of organ or region affected
Aitchison (David) cure for, 146—BI
American Society for Control of, (Women's Field Army honors Mrs. Stoddart) 1171
Baker (Norman) loses again in court, 875
Children's Tumor Registry at Memorial Hospital, N. Y., 273

CANCER—Continued
control, (work extended, Del.) 59; (new advisory members, Illinois) 270; (public forum, Chicago) 531; (in Germany under Hitler) 768; (new division, W. Va.) 1102; (board chairman: Dr. Pettit) 1169; (Canadian Medical Ass'n. studies) 1236; (federal legislation) 1381—OS; (2nd forum, Chicago) 1403
control, Colorado Society for, first training school, 270
Control Month: April, 1171
deodorant for sickrooms, 1116
etiology, diethylstilbestrol carcinogenic action, [Abarbanel & others] ★1128
etiology, sunlight (Council report) ★515; 1285—E
heredity, genetics in human, 629
incidence in San Francisco and Alameda Counties, [Sommers] 153—ab
Koch trial opened, Detroit, 691
primary latent, [Gewanter] 888—ab
metastases from prostate, diethylstilbestrol effect on, [Clarke & Viets] ★499; (correction) 694
metastases from prostate, serum "acid" phosphatase in diagnosis, [Sullivan] 79—ab
research: British Empire Cancer Campaign report, 962
teaching day at Rochester, 1102
tissue, B vitamins in, 519—E
treatment, delay in, [Harms & others] ★335
treatment, egg white and avidin, 92; [Rhoads & Abels] ★1261
treatment, fast neutrons, [Stone] 706—ab
treatment, orchiectomy or diethylstilbestrol, 382
treatment, pyrexia plus x-rays [Shoulders], 217—ab
Treatment, Radiation: See also Breast cancer treatment, radiation (total body), [Medinger] 458—ab
Treatment, Radium: See Uterus cancer
CANITIES: See Hair, gray
CANNABIS, marihuana intoxication, psychiatric aspects, [Anslinger] 212—C
CANNED Heat: See Heat
CANNING food at home, danger of botulism, 1286—E
CAPILLARIES: See also Telangiectasia
cutaneous, contractility, Lewis-Perry epinephrine test, [Urrutia] 547—ab
emboli in, from superficial burns, 596—E
fragility (resistance); negative and positive pressures compared, [Bell] 546—ab
stasis, thrombocyte deficit test in, [Maynard & Hollinger] ★1194
vasomotorsis role in peptic ulcer, [Boles] ★642
CAPPS Prize: See Prizes
CARBAMIDE: See Urea
CARBOHYDRATES: See also Dextrose; Honey; Lactose; Sugar; Syrup
diet content for the aged, [Tuohy] ★47
diet for pregnant and lactating women, [Ebbs] ★340
diet (high) in treating liver damage, [Ravdin & others] ★322
diet (high) in treating portal cirrhosis, [Greene] ★715
metabolism (tissue), pyruvic acid role in, [Yanof] 1308—ab
CARBON DIOXIDE combining power of plasma after 18 hours in ice box, (reply) [Wakerlin] 552
in oxygen, administration, New York Academy report, ★759
in oxygen, inhalation in low pressure areas, [Tarasenko] 1114—ab
rash from bubble bath, 1250
solidified, changes in skin from use of often spoken of as burns, 91
solidified (slush) for acne scars, [Friedlander] 151—ab
CARBON DISULFIDE, fumigate burrow openings to control plague, [Stewart] 283—ab
CARBON TETRACHLORIDE: See Medicolegal Abstracts at end of letter M
CARBONATED Beverages: See Beverages
CARBUNCLE, Malignant: See Anthrax
treatment, ultraviolet rays, (Council report) ★127
CARCINOMA: See Cancer
CARDIAC: See Heart
Neurosis: See Asthenia, neurocirculatory
CARDIOLOGY: See Heart
CARDIOVASCULAR DISEASE: See also Heart disease
course at Mount Sinai, 1101
deaths in Minn., for 1940, [Tuohy] ★45
Hypertensive: See Blood Pressure, high
in industry, New York Heart Association committee on, 1404
Syphilis: See Aortitis, syphilitic
CARDIOVASCULAR SYSTEM: See also Arteries; Blood Vessels; Capillaries; Heart; Vasomotor System; Veins
circulatory collapse, camphor for, views of consultants (Council report) 431
food and, in the aged, [Tuohy] ★44
roentgenography (contrast), Robb-Steinberg method, [Taylor & McGovern] ★1279
CAREY'S (Dr.) Marsh Root Prescription 777 Tablets also Laxative Pills, 884—BI
CARIES: See Teeth
CARNEGIE Institute Nutrition Laboratory, (Dr. Carpenter director) 446
Institution, Contributions to Embryology, dedicated to Dr. Streeter, 362
CAROTENE in Blood: See Blood
CAROTID SINUS syncope, vagal bilateral type, [Gall] 544—ab
syncope, vasodepressor, [Sigler] 623—ab
CARRIERS: See Disease carriers (cross reference)
CARS: See Automobiles
CARTILAGE, rib, repair of cranial defects, [Pudenz] ★478
tumors of chest wall, [Dolley & Brewer] ★1135
CARTRIDGES, glass, for anesthetic solutions, 472
CARVER, GEORGE WASHINGTON, death, 270
CASAL'S Disease: See Pellagra
CASCARIN Compound Tablets, 453—BI
CASE Finding: See Tuberculosis
Records: See Medical Record
CASEIN, digest of, intravenously to counteract postoperative nitrogen loss, 546—E
growth promoting nonthiaminic factor in liver extract, [Jiménez Díaz] 468—ab
Hydrolysate of: See Amigen
treatment of liver damage, [Ravdin & others] ★322
treatment of shock from hemorrhage, [Elman & Lischer] ★498
CASEY'S Compound, 280—BI
CASTOR OIL, sulfonated, in cleansing mixture for cable rash, [Morris & Tabershaw] ★192
CASTRATION: See also Eunuchoidism; Sterilization, Sexual
treatment of prostate cancer, [Alyea] 979—ab; [Randall] 980—ab
treatment of prostate cancer combined with estrogens, [Chute] 463—ab; 980—ab
CASUALTIES: See also Accidents; Disasters; World War II
blanketing, British method: OCD circular, 1226
care and identification in industrial plant catastrophes, [Mould] 860—ab
transportation: OCD letter, 1226
CAT: See Cats
CATARACT, incipient, or epidemic keratoconjunctivitis? 1116
radiation, (Council report) ★515
CATARRH, Nasal: See Rhinitis
CATASTROPHES: See Disasters
CATAWBA'S Bu-Q-Ju Diuretic, 618—BI
Nervine, 280—BI
Pep-A-Man Tonic Laxative, 618—BI
CATGUT, allergy to and adhesions, [Vaccaro] 982—ab
sterility of American made, [Clock] 284—ab
vs. cotton sutures in relation to infection, [Cannaday] 397—ab
CATHARTICS, Carey's (Dr.) Marsh Root Prescription 777 Tablets, 884—BI
Cascarin Compound Tablets, 453—BI
Catawba's Pep-A-Man Tonic Laxative, 618—BI
Coldlax, 453—BI
Crawford's Sa-Lax, 453—BI
Dickson's Herb-Lax Tonic, 783—BI
Graham's Pills, 453—BI
J. W. D. Laxative Tablets, 369—BI
Lawrence Mack's Laxrid, 699—BI
Mineralvita, 699—BI
Nu-Vig-Or Laxative-Tonic, 699—BI
O'D Easylax, 538—BI
Prunlax, 69—BI
T-Lax, 69—BI
use of laxatives after labor, 223
CATHETERS, nasal, for oxygen therapy, New York Academy report, ★757
ureteral nylon, for giving continuous caudal analgesia, [McCormick] 700—C
CATHOLIC Hospital Association conference, 1405
CATS, diseases from, 713
etiologic role in virus (?) pneumonia, 197—E; [Blake] 980—ab
virus of feline agranulocytosis, 1353—E
CAUDAL Anesthesia: See Anesthesia
CAVAL Veins: See Vena Cava
CAVERNOUS SINUS, arteriovenous aneurysm of, causing pulsating exophthalmos, [Martin & Mabon] ★330
CELEBRATED Persons: See Great Men
CELLS: See Blood cells; Tissue; Tumors, giant cell
CELLU Green Lima Beans, 677
CELLULOID repair of cranial defects, [Pudenz] ★478
CELLULOSE Tape (scotch): See Oxyuriasis
CELOTHELIOMA: See Mesothelioma
CENSORSHIP: See United States censorship
CENSUS: See also Population
of physicians, (Bureau report) 1384—OS
U. S. Bureau of, births in hospitals vs. at home, 1092—E
U. S. Bureau of, *Current Mortality Analysis* issued monthly by, 948—E
CENTRAL Epidemic Control Board, members of, 762—E
Neuropsychiatric Association, (meeting canceled) 1103
Society for Clinical Research, (proceedings), 1175; 1243; 1306; 1411
CEPHALIN-cholesterol flocculation test of liver function, [Mateer & others] ★723; (discussion) 737
CEREAL PRODUCTS, consumption per capita, 1909-1939, [Stiebeling] ★834; ★836
American Association of Cereal Chemists, sponsors lectures, 1234
CEREBROSPINAL FEVER: See Meningitis, cerebrospinal epidemic
CEREBROSPINAL FLUID, "block" released by diethylstilbestrol in prostate cancer, [Clarke & Viets] ★499; (correction) 694
changes in multiple sclerosis, 551
drainage, Retan technic, [Retan] 71—C
herpes simplex virus in, in lymphocytic choriomeningitis, [Armstrong] 980—ab
potassium phosphate given directly into, in shock, [Stern] 545—ab
CEREBROSPINAL MENINGITIS: See Meningitis, cerebrospinal
CEREBROSPINAL SYPHILIS: See Neurosyphilis
CEREBRUM: See Brain
CERTIFICATION: See American Board of, (examinations)
CERVIX uteri: See Uterus
CESAREAN SECTION, indicated in diabetes? 1420
successful in coronary occlusion, [Horowitz & others] ★1342
use of sulfanilamide during, 66
CHADWICK Lectures: See Lectures
CHAFING: See Intertrigo
CHAGAS' Disease: See Trypanosomiasis
CHANCROID infection, treatment; diagnosis; incidence in World War I, [Greenwald] ★9
preventive, sulfathiazole orally, [Loveless & Denton] ★827
CHARLES (Joseph W.) collection on ophthalmology, 203
CHEESE, infected, typhoid from, [Bowman] 460—ab
CHEILOSIS: See Lips
CHEMICAL Industries: See Burns
Laboratory: See American Medical Association
Warfare: See also Gas specialists
warfare course, (Western Reserve U.) 447; (N. Y.) 532; (on medical aspects at Northwestern) 685; (teaching day, N. Y.) 1170
CHEMISTRY: See Biochemistry; Chemical
CHEMOTHERAPY: See also under names of specific agents
agents and tuberculosis, 763—E; 798
CHEST: See Thorax
CHESTER, FREDERICK DIXON, death, 363
CHEWING Gum: See Gum
CHICAGO: See also Institute of Medicine of Chicago
Conference on Health of Industrial Workers, 139
Heart Association, (annual meeting) 608
University of: See University
CHICKEN: See Eggs
CHIGGERS, Infestation with: See Trombidiosis
CHILBLAINS: See also Pernio
treatment, Bier's constricting rubber bandage, [Herxheimer] 792—ab
CHILDBED Fever: See Puerperal Infection
CHILDBIRTH: See Labor
CHILDREN: See also Families; Infants; Maternity: Pediatrics; names of specific diseases as Heart disease; Tuberculosis
Adolescent: See Adolescence
Crippled: See Crippled
cod liver oil and fruit juices for, England, 207; 275
dental health day, Ohio, 1102
exceptional, Institute on (9th), 610
food rationing card for, Switzerland, 1237
guidance program report, Mich., 203
health program (5 year) of Buchanan Foundation, 1405
Hospital for: See Hospitals, children's
institution for, rheumatic fever in, after tonsillitis outbreak, [Ditkowsky & others] ★991
mortality in Egypt, 614
Nursery for: See Nursery
physical examination (periodic), Germany, 1227
psychotherapy, lectures on, 203
school lunch program, [Stiebeling] ★837
sleep disturbances, 630
starvation, in Greece, France, etc., 1104
study similarities between parents and, Germany, 1360
Tumor Registry, Memorial Hospital, N. Y., 273
welfare: care of children of mothers in industry (A. M. A. Section Committee report), [Hesseltine & others] ★802
welfare, care of children of war workers, arrangements, England, 64
welfare, child care committee, Dr. Ellen C. Potter director, N. J., 532
welfare, child need, survey, N. Y., 692
welfare, state, 607—OS
welfare, wartime care, Mayor's Committee on, N. Y. C., 138; 447; 877; 1101
welfare, wartime care, women trained by civilian defense classes for, 352
welfare, wartime, Palestine, 614
White House Conference on, follow-up by National Citizens Committee, 533
CHILE federation praises hospital service in U. S., 141
National Congress of Medicine (first), 365
CHILLING, peripheral vasoneuropathy after, [Ungley] 218—ab
CHILLS and fever from sulfathiazole, [Moeschlin] 157—ab

CHILOMASTIX in intestines, 301
CHIN, sebaceous cysts of, 552; (reply) [Whitmore]- 1420
CHINA, North, drug factory, activities, 62
War in: See World War II
CHIROPODY corps in U. S. Army, 1380—OS
practice acts, state legislation on, (Bureau report) 1378—OS
CHIROPRACTOR: See also Medicolegal Abstracts at end of letter M
loses basic science certificate on abortion charge, Minn., 609
U. S. Employees' Compensation Act and, 1381—OS
CHLORACNE, cable rash or Halowax dermatitis, [Morris & Tabershaw] *192: 471
CHLOROAZODIN (azochloramid), membrane containing, for burns, [Andrus] 978—ab
CHLORINATED LIME, deodorant for sickrooms, 1116
CHLOROFORM toxicity, reserve protein in liver, 518—E
CHLOROPHYLL ointment for wounds, [Boehringer] 793—ab
use in wound healing, 1237
p-CHLORO-XYLENOL solution (Zondek's) for intramuscular use, 779
CHOCOLATE milks a desirable food? [Bristol] 871—ab
CHOLAGOGUES: See Bile secretion
CHOLANGITIS: See Bile Ducts inflammation
CHOLECYSTECTOMY: See Gallbladder excision
CHOLECYSTITIS: See Gallbladder inflammation
CHOLECYSTOHEPATO-HYPERGLYCEMIC-glycosuric syndrome, [Portis] *734
CHOLELITHIASIS: See Gallbladder calculi
CHOLERA in infants, sulfanilamide for, [Munoz Turnbull] 296—ab
CHOLESTEROL-cephalin flocculation test of liver function, [Mateer & others] *723; (discussion) 737
in Blood: See Blood
CHOLINE: See also Acetylcholine; Mecholyl
chloride plus fat diet in icterus gravis neonatorum, [Danis] 544—ab
in liver cirrhosis, [Yater] 720—ab
viral chemoprophylaxis, 435—E
CHONDRODYSPLASIA: See Dyschondroplasia
CHOREA, emotional behavior disorder in 1186 in pregnancy; vitamin B6 for, [Rabin] 378—ab
symptom of rheumatic fever in children, [Hansen] *990
CHORIOMENINGITIS, lymphocytic; herpes virus in spinal fluid, [Armstrong] 980—ab
CHORIONIC GONADOTROPINS: See Gonadotropins
CHROMIUM, green discoloration between toes, 300
CHROMOPHYTOSIS, ultraviolet radiation, (Council report) *514
CHROMOSOMES, predetermination of sex; establish genotypes, 348—E
CHRYSOTHERAPY: See Gold treatment
CHYLOTHORAX, postoperative; sudden death after infusing aspirated chyle, [Whitcomb] 216—ab
CIBA Pharmaceutical Products, Army-Navy E to, 953
CICATRIX: See also Acne; Keloids
itching, from burns in boy aged 4; calamine lotion prescription, 302
CIGARET drain, gauze packing in, to introduce sulfanilamide, [Wise] *666
Smoking: See Tobacco
CILIARY BODY: See Iridocyclitis
CIMEX: See Bedbugs
CINCHONA Products Institute research fellowship on quinine, 878
CINEMA: See Moving Pictures
di CIO, ALFREDO V., honored, 208
CIRCULATION: See Blood circulation
CIRCULATORY SYSTEM: See Cardiovascular System
CIRRHOSIS: See Liver
CISTERNA puncture, potassium phosphate by, in shock, [Stern] 545—ab
CITIZENS: See Americans; United States citizens
CITRULLIN, anti-infective agent, [Smith] 851—ab
CITRUS Fruit: See Fruit
Pectin: See Pectin
CIVIL Air Patrol to fly blood plasma supplies into stricken areas, 601; 953
Service examination for intern, Calif., 774
CIVILIAN DEFENSE: See Medicine and the War
CLAVACIN, anti-infective agent, [Smith] 851—ab
CLEANLINESS, East Prussia teach their pupils, 768
CLEANSING: See Detergents
CLEVELAND Clinic Foundation, (lawyer named head) 61; (Medical Specialist Unit No. 110 in New Zealand) 1291
Medical Library exhibit on Vesalius, 1297
Medical Service Association, (prepayment plan, citizens' committee named for) 204
CLIMACTERIC: See also Menopause
in the male, effect of gonadotropins and androgens, [Heller] 1176—ab
CLIMATE: See Acclimatization; Desert; Seasons; Temperature
CLINICAL Investigation, American Society of, (meeting canceled), 1236
CLINICAL—Continued
Journal: See Journals
Laboratory: See Laboratories
Orthopaedic Society, (joint meeting) 141
Pathologist: See Pathologists
research, Central Society for, (abstract of proceedings) 1175; 1243; 1306; 1411
CLINICS: See also Heart; Maternity; Orthopedics; Tuberculosis; Venereal Disease
free, attendance falling off, 349—E; 1099—OS
Langley Porter Clinic dedicated at U. of California, 690
merchant marine polyclinic, 1404
CLOSTRIDIUM contaminated wounds, effect of sulfonamides, gramicidin and zinc peroxide, [Sandusky] 459—ab
Welchii: See also Gangrene, gas
welchii infection, zinc peroxide, proflavine and penicillin in, [McIntosh] 1181—ab
CLOTHING: See also Hat; Uniforms
rationing for mother and child, Germany, 1360
type of for women in industry, (A. M. A. Section Committee report) [Hesseltine & others] *800
women's work, standardized by American Standards Association, 1171
COAGULATION: See Blood coagulation
COBEFRIN vs. epinephrine in dental surgery, 120: 248; (reply) 121: 224
COBRA venom for analgesia, 1186
COCAINE: See also Anesthesia
sensitivity to, 1250
COCCIDIOIDES, meningitis caused by, [Skoggland] 1179—ab
COCHRAN Lecture: See Lectures
COCKROACHES, Goodhue "health bomb" to control, 846
COCKTAILS, vegetable juice, (Council report) *758
COCOANUT Grove Disaster: See Disasters
COCONUT, Oil of: See Oil
water as culture medium, [Picado T.] 295—ab
COD LIVER OIL, external use, status of, (Council report) *759
exported to Germany, 1360
for young children and expectant mothers, England, 207; 275
no beneficial effect on respiratory infections, [Lewis & Barenberg] 212—C
relation to A. T. 10, 518—E
treatment of burns, [Hamilton] 703—ab; (Council report) *759
treatment of burns with paper tissue ointment dressing, [Callahan] 541—ab
treatment of war wounds, [Hawking] 466—ab
COFFEE, rationing amount available to industrial cafeterias, [Goodhart] 870—ab
substitute: sassafras tea, 986
COITUS: See Birth Control; Impotence; Libido
COLD: See also Chilling; Freezing; Frostbite; Refrigerator
allergy in butcher, 896
allergy with nasal symptoms, 713
daily temperature at time of conception effect on offspring, [Petersen & Mayne] *929
effect on shock, [Wakim & Gatch] *803
exposure, few fatalities charged to, 878
Therapeutic Use: See also Carbon Dioxide, solidified
therapeutic use, cooling in shock, 432—E; (quotations from Goodwyn in 1788 and Snow in 1841) [Waters] 783—C; (experience during Spanish Civil War) [Perry] 966—C; (deliberate maintenance at 90 F. rectal) [Fay] 1109—C; [Brown] 1109—C
therapeutic use, dry refrigeration for immersion foot, [Webster] 77—ab
therapeutic use, in damage due to cold, [Greene] 1151—ab
therapeutic use, refrigeration for frostbite, [Bigelow] 460—ab
tissue changes from, vs. that of heat, 91
Water, "Immersion Foot or Hand": See Water
COLDLAX, 453—BI
COLDS: See also Cough
A-Z Tablets, 884—BI
Cold Special No. 2 Red, 280—BI
Coldlax, 453—BI
control, [Keefer] *802
immunization (intranasal), N-V Nasal, 471
immunization of Industrial workers, [Bristol] *816
Syn-O-Scope and Synex, 280—BI
treatment, instill vitaminized oils in nose, [Vidal Freyre] 1417—ab
treatment, sulfadiazine spray, gramicidin, penicillin, [Bordley] 978—ab
treatment, sulfonamides routinely, to prevent pneumonia after, 1185
vaccines, [Keefer] *803
vitamin A or cod liver oil no beneficial effect, [Lewis & Barenberg] 212—C
COLITIS: See also Intestines, Inflammation (enterocolitis)
amebic, at state hospital, N. Y., 1234
mucous, iatrogenic disorders, 879
ulcerative (chronic), pneumoperitoneum for, [Neumann] 1416—ab
COLLAPSE: See Shock
Therapy: See Tuberculosis, Pulmonary, artificial pneumothorax
COLLEGE: See University
COLLEGE—Continued
Education: See Education, Medical, premedical
of Physicians, Surgeons, etc.: See American College; Royal College
Students: See Students
COLON: See also Colitis
Bacillus: See Escherichia coli
disease, mild hyperbilirubinemia in, [Johnson & Bockus] *729; (discussion) 737
diverticula, proctoscopic diagnosis, [Jackman & Buie] *1144
motility, normal pattern, dyskinesia, effect of drugs, [Atkinson & others] *646
polyposis (familial), [Friedell & Wakefield] *830
ureter transplanted into sigmoid, [Jewett] 375—ab
COLONIAL medicine, medical benefits to natives under British colonial rule, 695
COLOR BLINDNESS, industrial placement and, [Bartle] *1002
Lepper's (J. H.) alleged cure, 948—E
of physician and military service, 1315
test charts: Pseudo-Isochromatic Color Test, 472
treatment, vitamin A, (reply) [Weigand] 382
COLORADO Society for Control of Cancer first training school, 270
COLORING: See Blond; Brunet; Pigmentation (cross reference)
COLOSTOMY, proctoscopy after, [Jackman & Buie] *1145
COMA: See also Diabetes Mellitus
liver deaths, [Heyd] *736
COMEDO, treatment, ultraviolet rays (Council report), *127
COMMISSIONS: See under Medicine and the War
COMMITTEE: See also American Committee; National Committee
of A. M. A.: See American Medical Association
on Food Composition, National Research Council creates, 777
on psychosomatic medicine, new, N. Y., 960
on sanitary engineering, National Research Council creates, 138
COMMONWEALTH FUND: See Foundations
COMMUNICABLE DISEASE: See Epidemics; Infectious Disease
COMMUNITY Service Society of New York new health committee, 609
COMPENSATION for Injuries: See Workmen's Compensation
of Physicians: See Fees
COMPLEXION: See Blond; Brunet
CONCEPTION: See Impregnation; Pregnancy
Control of: See Birth Control
CONCUSSION: See Abdomen; Brain
CONFERENCE: See also National Conference; under list of societies at end of letter S
Graduate: See Education, Medical
of State and Provincial Health Authorities of North America, 961
CONGELATIO: See Frostbite
CONGRESS: See Inter-American; list of societies at end of letter S
A. M. A. Annual: See American Medical Association
of Industrial Organizations (C. I. O.): See Industrial Trade Unions
U. S., Medical Bills in (weekly summary): See Laws and Legislation
CONIUM maculatum: See Hemlock
CONJUNCTIVITIS after sulfapyridine, etc., [Dowling & Lepper] *1193
chronic lipobacteroconjunctivitis; intestinal origin, [Szerdahelyi] 982—ab
from sunlight, prevent by glasses and goggles, (Council report) *514
gonococcic, sulfonamides for, [Levy] 154—ab; [Sweet] 457—ab
Granular: See Trachoma
Shipyard "Pink Eye": See Keratoconjunctivitis
CONNECTICUT, rehabilitation service plus workmen's compensation, [Biram] 863—ab
CONSCRIPTION: Conscripts: See Medicine and the War
CONSTIPATION: See also Cathartics
colon motility, [Atkinson & others] *646
new disease entity? [Bowdoin] 889—ab
CONSTITUTION: See also Personality
histamine-susceptible in latent allergy, [Albus] 88—ab
pellagra and; Casal's Disease, [Diaz-Rubio] 296—ab
type in peptic ulcer, [Boles] *643; *644
CONSULTORIO Medico Standard and Dr. S. Kemps, 537—BI
CONTAGION: See Infection
CONTAGIOUS DISEASE: See Infectious Disease
CONTEST: See Prizes
CONTIN Lecture: See Lectures
CONTINUATION Courses: See Education, Medical, graduate
CONTRACEPTIVES: See Birth Control
CONTRAST Medium: See Roentgenography
CONVALESCENT and rest hospitals, statistics, *1016
center, Walter Reed Hospital's, 1290
Blood: See Pneumonia, atypical
Serum: See Serum, convalescent (cross reference)

CONVERSATION, double, test to detect feigned deafness, [Pitman] ★752
CONVULSIONS: See also Epilepsy
fatal sulfonamide toxicity, New York City, 1941, [Sutliff & others] ★307
reaction to mecholyl chloride, [Spitz] 302
Therapeutic: See Electric Shock; Insulin Shock Treatment; Metrazol
COOKBOOK of dehydrated foods for army use, 600
COOLEY'S Anemia: See Anemia, erythroblastic
COOLING: See Cold, therapeutic use
COPLEY Medal: See Prizes
COPPER, black dermographism produced with, [Urbach & Pillsbury] ★485
green discoloration between toes, 300
CORAMINE: See Nikethamide
CORN, consumption per capita, 1909-1939, [Stiebeling] ★834; ★836
CORNEA, arcus lipoides (arcus senilis), [Rintelen] 157—ab
circumcorneal injection and ariboflavinosis, [Scarborough] 707—ab
Inflammation: See Keratitis; Keratoconjunctivitis
ochronosis complicating alkaptonuria; (refutation, relation to vitamin C) [Steele] 700—C; [Twyman] 784—C; [Smith] 1304—C
pyocyaneus infection, sulfadiazine transfer in, [von Sallmann] 284—ab
superficial vascularization after riboflavin, [Sandstead] 624—ab; (correction) 878
CORYNEBACTERIUM infection, propamidine in, 946—E
CORONARY Arteries: See Arteries
Sclerosis: See Arteriosclerosis
Thrombosis: See Thrombosis
CORONER, innovations by Dr. H. M. Goddard, Philadelphia, 1222—E; 1376—OS
CORPORATIONS: See Medicolegal Abstracts at end of letter M
CORPUS LUTEUM action of adrenal cortex extract on endometrium, [Neumann] 296—ab
action, vitamin E intensifies in habitual abortion, [Bach] 220—ab
Hormone: See Progesterone
CORYZA: See Colds
COSMETICS: See also Berlock Dermatitis
Federal Food, Drug and Cosmetic Act: See Federal
powders and jewelry, black dermographism from, [Urbach & Pillsbury] ★495
Rosen (Isidore), distributor of, 69—BI
COTTON vs. catgut sutures in relation to infection, [Cannaday] 307—ab
pyroxylin impregnated, allergen proof encasings, 345
workers, acute illness in, [Schneiter] 787—ab
COUGH: See also Colds; Hemoptysis; Whooping Cough
No-Wheez Cough Syrup, 884—BI
COUGHLIN, WILLIAM T., memorial plaque, 203
COUMARIN: See Dicoumarin
COUNCIL, A. M. A.: See American Medical Association
COUNTY "Accreditation": See Tuberculosis Health Unit, etc.: See Health Society: See Societies, Medical
COURSES: See Education, Medical
COURT Decision; Trial: See Medical Jurisprudence
COWPOX: See Vaccinia
COWS Milk: See Milk
CRANIUM: See also Brain; Head
defects, repair with tantalum; also celluloid and vitallium, [Pudenz] ★478
defects, repair with tantalum implant, [Pulcher] ★931
denuded skull, immediate covering, [Dorrance] 284—ab
injury, streptococcic meningitis after, [Riley & Waugh] ★338
roentgen study, lead poisoning from bullet in sphenoid sinus, [Futch] ★580
CRAWFORD (Jane Todd), Day, 202
CRAWFORD'S Sa-Lax, 453—BI
CREAM: See Butter; Cheese; Ice Cream
Protective: See Ointment, protective
CREATININE clearance, vitamin D and dihydrotachysterol, 518—E
excretion in woman; relation to obesity, [Tager] 542—ab
CREEPING Eruption: See Larva migrans
CRICKS in neck, [Semmes & Murphey] ★1209
CRILE, GEORGE W. (death; portrait), 209; (special memorial services), 1102
CRIME: See also Medicolegal Abstracts at end of letter M
medical aspects, persons interested in, write to Medical Correctional Association, 141
psychiatric aspects of marihuana intoxication, [Anslinger] 212—C
CRIMINALS: See also Crime; Impostors
electroencephalogram in trials, 64
male nurse wanted: R. E. White, 1236
syphilis (particularly neurosyphilis), incidence in, Brazil, 366
CRIPPLED: See also Disability; Handicapped; Physical Defects; Poliomyelitis
children, Easter seals for, 1103
CROPP (David B.), The apeutic Couch, 537—BI
CROUCHET'S Disease: See Encephalomyelitis
CRUSH Injury: See Trauma
CRYMOTHERAPY: See Cold, therapeutic use
CRYPTORCHISM: See Testis, undescended
CULTS: See Chiropractors; Osteopaths
CULTURE: See also Gonococcus; Pneumococcus
medium; coconut water, versatile use, [Picado T.] 295—ab
CUMMINGS Foundation: See Foundations
CURARE, to modify convulsive shock therapy, [Woolley] 543—ab
CURRICULUM: See Education, Medical
CUTLER Test: See Blood sedimentation
CUTS, from duraluminum, [Sedlacek] 86—ab; (correction), 220
CUTTER Lecture: See Lectures
CUTTING, effect on growth of hair, 1116
oils, dermatitis; preventive: Steridol No. 3, 223
CYCLES, Foundation for Study of, (offers prize) 776; (A. M. A. representative appointed) 1328—OS
CYCLOPROPANE Anesthesia: See Anesthesia
CYCLOTRON, treatment, 54—E
treatment of cancer with fast neutrons, [Stone] 706—ab
treatment with radioactive phosphorus, [Lowe-Beer] 706—ab; [Kenney] 706—ab
CYST, Sebaceous: See Steatoma
CYSTITIS: See Bladder inflammation
CYSTOSCOPY: See Bladder
CYTOPLASM, modification of genetic trends, [Petersen & Mayne] ★929

D

DABNEY'S Grip: See Pleurodynia, Epidemic
DAIRY PRODUCTS: See also Casein; Cheese; Ice Cream; Milk
consumption per capita in U. S., 1909-1940, [Stiebeling] ★833; ★836
DANDRUFF: See Alopecia seborrheica
DANDY'S Method: See Arteries, carotid
DARK Adaptation: See Eyes, accommodation
DAVIS and Geck, Inc., Army-Navy E to, 522
DAVIS Memorial Fund, 1394—OS
DAY, LEMUEL E., memorial service for World War II hero, 362
D-B-T, Consultorio Medico Standard and Dr. S. Kemps, 537—BI
DEAFNESS: See also Hearing, impaired
employing the deaf, [Harvey & Luongo] ★105; ★106; [Bartle] ★1002
prevention, Washington County program, Md., 1354—E
prevention with plastic mold (ear stopper), [McCoy] ★1330
simulated, unilateral, detecting device with stethoscope, [Pitman] ★752
Treatment: See also Hearing, aids
treatment, vibraphone (Council report), 345
DEATH: See also Coroner; Murder; Suicide
Accidental: See Accidents, fatal; Automobiles, accidents
Cause of: See also Accidents, fatal; Automobiles, accidents; under names of specific diseases, conditions and substances as Anesthesia; Sulfonamide Compounds; Tuberculosis; etc.
cause of, exposure to cold, 878
cause of, in hemorrhagic shock, 1354—E
cause of, in old age, [Tuohy] ★45
cause of, in pulmonary embolism, [Hachmeister] 46—ab
cause of, of 8,884 medical men, England, [Gosse] 625—ab
hospital, compared with admissions, ★1019
liver deaths, [Heed] ★756
of Fetus: See Stillbirths
of Physicians: See Physicians; list of Deaths at end of letter D
Postmortem: See Autopsies
Rate: See Statistics
sudden, after infusing aspirated chyle; [Whitcomb] 216—ab
sudden, after injecting foreign protein, [Vance] 74—ab
sudden, in starvation, [de Salamanca] 893—ab
War: See World War II, casualties
DECIDUA: See Endometrium
DEFECTIVES: See Physical Defects
DEFENSE: See Medicine and the War; World War II
DEFERMENT, Military: See Medicine and the War
DEFICIENCY DISEASE: See also Nutrition; Pellagra; Rickets; Scurvy; Vitamins deficiencies
[Kruse] ★587
DEFORMITIES: See Abnormalities; Crippled; Fingers
DEGLUTITION: See Swallowing
DEHYDRATION; dehydrated foods cookbook for use of army cooks, 600
DELBRUECK, M., research on poliomyelitis inhibition, 194—E
DELIVERY: See Labor
DEMENTIA PRECOX, hair turned white over night in, 161
treatment, insulin coma, in schizophrenia, [Pinto Pupo] 467—ab
treatment, prefontal leukotomy, [McGregor] 466—ab
DEMEROL, clinical use to relieve pain, [Hecht] 1307—ab
DENISON University Foundation, (Dr. Herrick given honorary membership) 204
DENTISTRY: See also Teeth
American Dental Association, (*Journal of Oral Surgery*) 611; (new location) 1171
children's dental health day, Ohio, 1102
dental officers promoted: Wells (C. R.) and Molt (F. F.), 1358
equipment for coast guard stations, Medical and Surgical Relief Committee sent, 138
hygienists, number in hospitals, ★1020
naval dental corps rear admiral: Capt. Lyle, 1225
procedure of processing dentists, Surgeon General's 1943 program, 843
quota for dentists, 1289
Selective Service bulletin on dentists, 131—E; 133
surgery, epinephrine added to procaine solutions, 120: 248; (reply) 121: 224
DEODORANT: See Odor prevention
DEPRESSION, Mental: See Melancholia
DEPTH charges and pathologic changes from water blast, [McIntire] 120: ★1137; [Cameron] 121: 376—ab; [Auster & Willard] ★995; 1220—E
DERCUM, FRANCIS X., Dr. Throckmorton's chairman address, 435—E
DERMATITIS: See also Eczema; Skin; etc.
Actinica: See Sunburn
Antidermatitis Factor: See Pyridoxine
Berlock: See Berlock Dermatitis
Contact: See Dermatitis venenata
exfoliativa, fatal postvaccinal, [Bloch] 466—ab
Hypostatica (varicose eczema): See under Varicose Veins
Industrial: See Industrial Dermatoses
sulfapyridine, sulfathiazole, sulfadiazine, [Dowling & Lepper] ★1193
sulfonamide (fatal), [Sutliff & others] ★307
treatment of various types with ultraviolet rays (Council report), ★127; ★128
venenata, from rubber service (gas) masks, [Lewe] ★422
venenata, from sulfathiazole ointment [Weiner] ★411
DERMATOLOGY: See also Skin
Asociación Argentina de Dermatología y Sifiliología, 208
in British Expeditionary Force in France, 207
Sociedad Mexicana a Dermatologia, (officers elected) 365
wartime, [Carslaw] 83—ab
DERMATOPHYTOSIS, "athlete's foot" preparations, (Council discusses) 838
treatment, ultraviolet rays (Council report), ★127
DERMATOSIS: See Industrial Dermatoses; Skin disease
DERMOGRAPHIA, black, [Urbach & Pillsbury] ★485
DERMOIDS of mediastinum, [Dolley & Brewer] ★1131
DESENSITIZATION: See Anaphylaxis and Allergy; Eczema
DESERT life of southwestern U. S. and snakes, 1420
DESOXYCORTICOSTERONE and progesterone, chemical relation, [Neumann] 296—ab
DETERGENTS, cleansing mixture (new); [Morris & Tabershaw] ★192; 471
DETROIT Orthopaedic Clinic and Cummings Foundation merge, 139
DEVIL'S Grip: See Pleurodynia, Epidemic
DEXTROSE, N. N. R., (Pacific Coast Co.) 193; (Readyflask) 593
postoperative nitrogen loss counteracted by, 346—E
reaction not from pooled plasma but probably from dextrose, 946—E
tolerance test in epileptiform attacks, [Lintz] ★505
tolerance test (intravenous) in fatigue, [Portis & Zitman] ★569
treatment of cholecystohepatohyperglycemic and glycosuric syndrome, [Portis] ★734
treatment of epileptiform attacks from calcified adrenals, [Lintz] ★505
DIABETES INSIPIDUS, hypothalamus destroyed by tumor, [Collins] 287—ab
DIABETES MELLITUS, American Diabetes Association (meeting canceled) 1103
coma (severe), 1,820 insulin units for, [Bailey] ★255
Consultorio Medico Standard and Dr. S. Kemps, 537—BI
diagnosis, cholecystohepato-hyperglycemic and glycosuric syndrome, [Portis] ★734
Diet in: See Diabetes Mellitus, treatment
in the aged, 1004—ab
industrial placement and, [Bartle] ★1002
insulin in, and military service, [Joslin] ★198
insulin in, 1,820 units in coma [Bailey] ★255
insulin in 5,780 units in 24 hrs. without inducing shock, [Lozinski] 538—C
insulin in, intranasal administration, 382
insulin in, 3:1 with combined protamine zinc insulin, [MacBryde] 1243—ab

DIABETES MELLITUS—Continued
insulin resistance, 52—E
insulin resistance due to infection, [Greene & Keohen] ★173
insulin shock in, during anesthesia [Papper] 286—ab
insulin, zinc crystals and crystalline zinc insulin injection (Council report) 592; (N. N. R. description) 592; 593
Kurex Diabetic Tonic, 699—BI
military service and, [Joslin] ★198
neuritis, vitamin B1 for [Needles] ★914
pregnancy indication for cesarean section? 1420
retinopathy in, [Bloch] 74—ab
skin disorders in: relation to vitamin deficiencies, [Rudy] 790—ab
Tongue River Apiaries Honey, 884—BI
Treatment: See also Diabetes Mellitus, insulin in
treatment, diet, Cellu Green Lima Beans, 677
treatment, diet for those in service, [Joslin] ★198
treatment, diet ratios for children, [Jackson] 283—ab
vitamin A deficiency; effect of treatment [Dormer] 293—ab
DIAGNOSIS: See also Clinical; under names of specific disease
by medical student; blind belief in laboratory data, 8—ab
Case Finding: See Tuberculosis
mistaken, in rheumatic fever in children; [Hansen] ★987
new virus diagnostic unit, Calif., 690
signs useful in parkinsonism and in nephritis, [Hanes] ★1152
DIAMIDINES, aromatic, in chronic wound infection, 946—E
DIAMINODIPHENYLSULFONE and tuberculosis, 763—E; 798
DIAMINOSULFONE glucoside, administrative method, New York Academy report, ★759
DIAPHRAGM, abscess (left subphrenic) [Neuhof] 465—ab
pleurisy; left costovertebral pain, 629
DIAPHRAGMATIC SPASM, Epidemic: See Pleurodynia, Epidemic
DIARRHEA: See also Dysentery
colon motility in, [Atkinson & others] ★646
infectious, of newborn reportable, N. J., 775
DIATHERMY, machines and short wave to treat pelvic inflammation, [Upton & Benson] ★38
short wave treatment of angina pectoris, 897
DIBBLE, JOHN, reported missing, 1355
DICK Test: See Scarlet Fever
DICKSON'S Herb-Lax Tonic, 783—BI
DICOUMARIN (dicumarol) for thrombophlebitis, and embolism, [Evans] 623—ab
DICTION: See Terminology
DIET: See also Dietitians; Food; Infants, feeding; Nutrition; Vitamins
American, adequacy of, [Stiebeling] ★831
Americans do not eat wisely, says Gallup poll, 693
Calories in: See Calories
Carbohydrates in: See Carbohydrates
conditions in industry, [Goodhart] ★93
Deficiency: See Nutrition deficiency
Diabetic: See Diabetes Mellitus, treatment
Fat in: See Fat
hospital training in dietetics U. S. Civil Service exam., 205
Improvement in, for worker, [Bing] ★815
in Pregnancy: See Pregnancy
invalid, and food rationing, OPA order no. 13, 1157—E
ketogenic, to stimulate gonadotropic function of pituitary, [Julesz] 219—ab
Lunches: See under Food; Schools
Meals: See under Food
trinitrotoluene poisoning affected by, [Himsworth] 1211—ab
of old people, [Tuohy] ★42
of older worker [Carlson] ★808
Protein in: See Protein
Salt Free: See Salt
special, Los Angeles issues prescription for, 439
Therapeutic: See Diabetes Mellitus; Liver damage
virus infections and, 1284—E
DIETHYLSTILBESTROL, cause loss of hair? 224
effect on spinal fluid "block" in prostate cancer, [Clarke & Viets] ★499; (correction) 694
N. N. R. (Breon: Stearns) 677; (Abbott) 839
puerperal genital tract changes induced by [Rutherford] 73—ab
rash from, 1116
treatment (obstetric and gynecic) reactions, [Abarbanel & others] ★1123; (reactions) ★1127
treatment of cancer, 382
DIETITIANS, corps authorized, 199
number in all hospitals, ★1020
DIGESTION: See also Indigestion
time of food, 916—ab
DIGESTIVE SYSTEM: See also Digestion; under various organs involved
disorders, cause of death, Rio de Janeiro, 1238
DIGESTIVE SYSTEM—Continued
poliomyelitis: oropharynx vs. alimentary tract as source of, 348—E
respiratory function: aerophagy vs. gastrospiry, [Dillon] 457—ab
DIGESTO-PEP, 618—BI
DIGITALIS, effect on electrocardiogram, [Sellmer] 294—ab
heart block (partial) from, [Campbell] 545—ab
lanata, clinical effects, [Aceves] 295—ab
DIHYDROTACHYSTEROL and vitamin D, 518—E
DIIODOTYROSINE, thyroid transformation of iodine, [Mann] 791—ab
DILANTOIN: See Diphenylhydantoin Sodium
p-DIMETHYLAMINOAZOBENZENE, hepatoma induced by, 519—E
DINITRITOLUENE: See Nitritoluene
DINITROPHENOL: See Medicolegal Abstracts at end of letter M
DIODRAST injection, fatal and other sequels, [Pendergrass] 977—ab
concentrated solution 70% for organography, (Council report) 1351
injections, reactions in angiocardiography, [Taylor & McGovern] ★1270
sensitivity, ocular test for, [Archer] 978—ab
DIPHENYLACETYL-diethylaminoethanol hydrochloride, antispasmodic action on colon, ★649
DIPHENYLAMINE, industrial hazard, [McGee] 852—ab
DIPHENYLHYDANTOIN SODIUM (Dilantin; Phenytoin Sodium), fatal hemorrhagic erythema multiforme after, [Ritchie] 458—ab
treatment of asthma, 1316
DIPHTHERIA, bronchial, primary; rare location, 66
complications, pulmonary, in adults, [Claveaux] 85—ab
epidemic in northern Palestine, [Cameron] 1248—ab
immunization program, (Wichita, Kans.) 531; (England) 696
in Germany, 200; (increasing) 953
DIPHTHEROIDS: See Corynebacterium
DIPLOCOCCUS pneumoniae: See Pneumococcus
DIRECTORY: See American Medical Directory
DIRT: Removal of: See Detergents
DISABILITY: See also Accidents; Crippled; Handicapped; Physical Defects
benefits for firemen, other aides in catastrophe, [Mould] 860—ab
ear, prevention in industry with plastic mold (stopper), [McCoy] ★1330
from epidemic keratoconjunctivitis, [Sanders & others] ★251
Industrial: See Industrial Accidents; Workmen's Compensation
DISASTERS, civil air patrol will transport plasma in emergencies, 601; 953
Cocoanut Grove fire in Boston, 266; 363; 597—E; 684
increase in catastrophe fatalities, Metropolitan Life report, 611
industrial plant catastrophes, Emergency Medical Service role in, [Mould] 860—ab
DISEASE: See also Autopsies; Death; Diagnosis; Health; Pathology; Patients; under names of specific diseases
agents, transportation of: ticks, rats, 840—E
Argentine Congress on Endemic and Epidemic Diseases, 1st, 450
bromsulphalein retention test in low grade chronic illness, [Stiles] 374—ab
Carriers: See also Typhoid; Typhus
carriers: food handlers, 1156—E
carriers; steam radiators, 985
Deficiency: See Deficiency
Disabling: See Disability
Epidemics: See Epidemics
exotic, registry of, Wis., 1170
from dogs and cats, 713
Hazard: See Industrial Diseases
ill health of 8,884 medical men, England, [Gosse] 625—ab
in Great Men: See Great Men
Industrial: See Industrial Diseases
Infectious: See Infectious Diseases
list of, employment and placement of persons with, [Bartle] ★1002
list of, which disqualify for military service, 959
Mental: See Mental Disorders
muscular exercise and fatigue in: working capacity; oxygen intake and debt, 1093—E
new entity? [Bowdoin] 889—ab
Nomenclature: See Terminology
Occupational: See Industrial Diseases
Physical-Mental Relationship: See Psychosomatic Medicine
Rate: See Vital Statistics, morbidity
reportable: atypical pneumonia, N. Y. City, 271
reportable: cancer, Canada, 1236
reportable: infectious diarrhea of newborn, N. J., 775
reportable: keratoconjunctivitis, (New York) 271; (Mich.) 532; 959
DISEASE—Continued
reportable: occupational disease, (Ky.) 1169; (A. M. A. Council's committee report) 1229—OS
Sickness Insurance: See Insurance, health
Treatment of: See Therapeutics
DISINFECTANTS: See also Antiseptics
action on Staphylococcus and Escherichia, [Hoyt] 465—ab
skin, criteria for evaluation, (Council report) 593
DISINFECTION of Air: See Air
DISLOCATION, ski injuries, [Moritz] ★97
DISPENSARIES: See Clinics
DISTINGUISHED Service Medal: See Prizes; World War II
DISTRIBUTING Center for Parasitological Specimens, 1171
DITHIZONE, Setterlind-Krause method for cadmium determination, 611
DIURESIS AND DIURETICS, Catawba's Bu-Q-Ju Diuretic, 618—BI
Dorman's Tablets, 369—BI
in edema of renal origin, [Lehnhoff & Binger] ★1321
DIVERTICULA: See Colon
DIZZINESS: See Vertigo
DOCK Lecture: See Lectures
DOCTORS: See Physicians; Medicolegal Abstracts at end of letter M
"Doctors at War": See American Medical Association radio program
Trade names beginning with "Dr.": See under surname concerned
DOGS: See also Rabies
carriers of Brazilian typhus, 65
diseases from, 713
DOISY, EDWARD A., American Pharmaceutical Manufacturers' Ass'n award to, 273; 435—E
DOMENECH, JUAN M. P., appointment, 141
DOMINO Brands of Orange and Grapefruit Juice, 677
DONATIONS: See Fellowships; Foundations; Library; Prizes; Research grants; Scholarships; University
DONORS: See Blood Transfusion
DONOVAN, G. E., invents phonoelectrocardioscope, 778
DORMAN, J. W., 369—BI
DR.: Trade names beginning with: See under surname concerned
DRAFT Board: See under Medicine and the War
DRAIN (cigaret) gauze packing in, to introduce sulfanilamide, [Wise] ★666
DRAINAGE: See Cerebrospinal Fluid; Gallbladder
DRESSINGS: See also Gauze; Medical Supplies
Bier's constricting rubber bandage for chilblains, [Hexheimer] 792—ab
glass, for wounds, [Giordano] 710—ab
surgical, sulfonamide film ("new skin") [Pickrell] 373—ab
DRIED Food: See Dehydration
DRINKS: See Beverages
DRIP Method: See Peptic Ulcer, treatment
DROPSY: See Ascites; Edema
DROWNING, deaths from, National Safety Council report, 694
DRUG STORE: See Pharmacy
DRUGGIST: See Pharmacists
DRUGS: See also Medical Supplies; Pharmacology; under names of specific drugs; Medicolegal Abstracts at end of letter M
activities at North China drug factory, 62
Addiction to: See under names of specific drugs as Cannabis
cost of proprietary vs. unprotected name, [Smith] ★1003
dangerous, state laws on, (Bureau report) 1378—OS
Federal Food, Drug and Cosmetic Act: See Federal
Formulary: See Formulary
in Wartime: See Medicine and the War; Priorities and Allocations; World War II
Manufacturers: See Pharmaceuticals
metric system instead of apothecary system used in Council publications, 839
N. N. R.: See American Medical Association, New and Nonofficial Remedies and under names of specific drugs as Acid, ascorbic; Dextrose; etc.
names of, England, 206
Pharmacopeial: See Pharmacopeia
Prescription: See Prescription (cross reference)
prices fixed, under Hitler's rule, 1164
Priorities and Allocations: See Priorities and Allocations
Therapeutic Use: See Chemotherapy; Therapeutics; under names of specific drugs and diseases
DRUM splint for fractures [Gusynin] ★952
DRUNKENNESS: See Alcoholism; Medicolegal Abstracts at end of letter M
DRURY, ALAN N., Lister Institute director, 533
DRY Ice: See Carbon Dioxide, solidified
DRYCO, high protein beverage, [Bauman & Gage] ★1283
DUCREY'S Bacillus: See Chancroid

DUCTLESS Glands: See Endocrine Glands
DUCTUS ARTERIOSUS, patent, endarteritis superimposed on, [Touroff] 78—ab
patent, ligation, [Humphreys] 1180—ab; [Joyce] 1415—ab
patent, roentgenography (contrast), [Taylor & McGovern] ★1270
DUKE University withdraws aid from maternity clinic, N. C., 140
DUNHAM Lectures: See Lectures
DUODENAL TUBE used to wash hypodermic needles, [Oelgoetz] 1186
DUODENUM, acid factor in ulcer, neutralizing ability in bulb, [Berk] 215—ab
cancer, (primary) [Berger] 372—ab
capillary vasoneurosis role in peptic ulcer, [Boles] ★642
function of gastrin, antral resection vs. fundusectomy in ulcer, [Connell] 454—C
irritable; mild hyperbilirubinemia in, [Johnson & Bockus] ★729; (discussion) 737
Ulcer: See Peptic Ulcer
DURALUMINUM, cut injuries with, [Sedlacek] 86—ab; (correction) 226
DUST, Disease from Inhaling: See Pneumonoconiosis
du VIGNEAUD, VINCENT, biotin structure determined by, 54—E
DYER, ROLLA E., heads typhus and rickettsial disease committee, 612
DYES: See also Eyebrow dye; under specific names of dyes
resorcinol, dermatitis from, 985
DYNELL Spring Water Company, 537—BI
DYSCHONDROPLASIA, 629
DYSENTERY: See also Diarrhea; Medicolegal Abstracts at end of letter M
Amebic: See Colitis, amebic; Medicolegal Abstract at end of letter M
bacillary acute (Flexner), sulfaguanidine and succinylsulfathiazole for, [Smyth & others] 1244—ab; ★1325; 1353—E
bacillary (Flexner) sulfathiazole and sulfaguanidine for, [Abeute Haedo] 1417—ab
bacillary, increasing incidence, 1158—E
bacillary, succinyl sulfathiazole for, [Poth] 374—ab
bacillary, sulfaguanidine for, 274
bacillary, sulfapyridine and sulfaguanidine for, in Middle East, [Paulley] 707—ab
DYSMENORRHEA, industrial aspect, (A. M. A. Section Committee report) [Hesseltine & others] ★800
treatment, diethylstilbestrol, [Abarbanel & others] ★1127
treatment, presacral neurectomy, [Rutherford] 891—ab
treatment, testosterone implantation, [Greenblatt] ★19
DYSPEPSIA: See Indigestion
DYSPHAGIA: See Swallowing
DYSPNEA: See Asthma
DYSTROPHY: See also Extremities
adiposogenital Fröhlich syndrome or obesity in infant; hormonal therapy, 898
adiposogenital, or Fröhlich syndrome, [Schonfeld] ★177; ★180
cholesteremia in healthy infants, [Llosa Ricketts] 793—ab
Ehlers-Danlos syndrome, [Roca] 709—ab
muscular, amino acids for, [Altshuler & others] ★166
muscular, and guanidine, [MacFate] 78—ab

DEATHS

A

Abdou, Naglb Tannous, 367
Adams, Edward, 1106
Adams, Fred L., 535
Adamson, William P., 616
Ahern, John Jeremiah, 1106
Ahner, Charles Louis, 697
Alexander, Harold Egbert, 144
Allemann, Albert, 210
Allen, Edgar, 530
Allen, Henry Willard, 210
Allen, Joshua, 67
Allen, Theophilus Powell, 697
Almy, Raymond C., 210
Alsobrook, Bloxham Edward, 1407
Anderson, George Riley, 367
Anderson, James McAllister, 1407
Andrew, David, 616
Andrews, Francis Normer, 964
Andrews, James Lindsay, 616
Andrus, Frank Clinton, 145
Angell, Jefferson L., 881
Anson, Gordon C., 881
Appleby, George Wilder, 1173
Applegate, William A., 965
Applewhite, William Woodard, 616
Arburn, Charles, 67
Armstrong, Marvin, 210
Armstrong-Jones, Robert, 777
Arneson, Arne O., 367
Arnold, George Beal, 1106
Arnold, William Birket, 1301
Aschaeur, Albert George, 1407
Ash, Eugene Hiram, 965
Ash, John Henry, 1407
Asserson, Mary Alice, 535
Austene, Charles Willett, 881
Austin, David Tarwater, 697

B

Babcock, Warren La Verne, 367
Bachelder, Bertha May Louise Lypps, 367
Barhop, John Carleton, 881
Backiel, Alexander Aloysius, 697
Badgley, John Anthony, 1407
Baer, Elizabeth M., 1239
Bagby, Louis, 1407
Bagully, Henry, 67
Bailey, Abbott Kenyon, 883
Bailey, William Thomas, 1173
Baker, William Pitt, 964
Baranowski, Stanley A., 67
Barasz, Samuel: See Barris, Samuel
Barbour, George H., 67
Bard, Charles Blanchard, 278
Barnes, William Martin, 780
Barnhill, John Finch, 964
Barnum, Walter Milo, 1301
Barrett, George Thomas, 780
Barrett, Samuel S., 67
Barris, Samuel, 616
Barron, William E., 881
Barry, William David, 451
Barton, Francis Marion, 144
Bayan, Charles E., 535
Beard, Edwin Abraham, 780
Beaumont, Robert Lee, 1301
Beck, Solomon, 367
Beck, Theodore, 367
Bee, Archibald, 451
Belanger, L. Ernest, 278
Bellflower, Hinton Miller, 697
Bell, Jean A. Vernier: See Vernier, Jean A.
Bench, Edward M., 67
Benes, Gordlan Edward, 367
Bennett, Robert Anderson, 210
Bennett, Samuel Dey, 451
Berck, Maurice Marshall, 368
Best, Sylvester Robert, 1301
Bickel, Charles, 881
Bidwell, Pern Jefferson, 535
Bienenfeld, Henry Lyons, 881
Bigelow, Leslie Lawson, 451
Billingsley, Urban Clark, 210
Binderman, Nahum, 7[illegible]
Bird, Willis Alonzo, 965
Birt, Arthur, 697
Bisson, Maurice Anthony, 617
Bitter, J. W. Edward, 451
Blach, Siegfried, 881
Blagg, James Emmett, 1301
Blake, James P., 616
Blanchard, Cluese A., 780
Blaylock, George A., 535
Blosser, Clarence Roy, 780
Boaz, Volney T., 451
Boehm, Walter Ernst, 881
Boldt, Hermann Johannes, 616
Boone, Walter, 616
Boozan, William Edwin, 1106
Boring, James R., 697
Bossard, Clemens, 697
Bottorf, Phebe Anderson, 144
Bourgeois, Jacques de Lorimier, 881
Boyer, Charles Harvey, 1106
Brackett, Elliott Gray, 367
Braden, David Ritchey, 881
Bradley, Daniel Hebster, 965
Bradshaw, John Hammond, 697
Brady, Adda T. Hedges, 616
Branower, William, 697
Braunfeld, Sigmund: See Braunfield, Sigmund F.
Braunfield, Sigmund F., 210
Braunlich, Arthur Richard, 905
Briggs, Charles Albert, 367
Brindley, Bethea Portis, 210
Bristow, William Charles, 697
Brockway, Charles Jesse, 780
Broderick, Edward J., 278
Brogger, Ruth Gudrun, 697
Brown, Cyrus Cathey, 68
Brown, George Edwin, 697
Brown, George Le Roy, 1239
Brown, William Launcelot, 616
Browne, George Cecil, 881
Browning, Joseph William, 616
Bruner, John Willet, 1301
Bryant, Frank Gould, 1407
Bryant, John D., 144
Buchman, Lewis Allen, 697
Buckley, Sara Craig, 210
Buel, Julius J., 1239
Bulkeley, Howard Sheldon, 881
Bullard, George Fletcher, 1239
Bullwinkel, Edwin Martin, 144
Bunker, Luther Grow, 210
Burns, John Erskine, 451
Burns, Martin Francis, 144
Burns, William Bernard, 67
Burnside, Lyman Ambrose, 698
Burr, Noah Arthur, 698
Butler, Charles Shorey, 1173
Byler, William Franklin, 780
Byrnes, Ralph Leonidas, 1407

C

Cabbell, Herbert G., 1239
Cain, Cornelius E., 1361
Calhoun, Alan Duncan, 451
Calkins, Cary N., 363
Camp, Erasmus Taylor, 1239
Campbell, Matthew, 144
Camper, Thomas Emory, 535
Candee, James Willis, 1407
Caraway, Samuel Handly, 451
Carlucci, Guiseppe: See Carlucci, Joseph
Carlucci, Joseph, 616
Carmichael, Eugene, 278
Carmichael, Samuel Victor, 144
Carnes, James Adam, 1407
Carney, Edward J., 1407
Carpenter, Allen Melville, 67
Carr, Francis Joseph, 451
Carroll, Edward Francis, 1407
Carter, Marcus, 1106
Carvell, Hanford, 1301
Carver, George Washington, 270
Casey, Ott, 535
Cashin, Martin Francis, 210
Cassasa, Charles Stephen Bartholomew, 1173
Castle, James, 780
Casto, Thomas J., 1106
Cates, Benjamin Brabson, 881
Catlin, Burnett Conner, 144
Caton, Walter Marion, 1407
Cauffman, Lawrence, 1239
Cecil, George Edwin, 881
Chamberlin, Franklin T., 1106
Chapman, Louis Ballantine, 780
Chappell, Guy, 1239
Cheavens, Thomas Henry, 1303
Cheeseman, John Coulter, 114
Chester, Frederick Dixon, 363
Childs, Raffeld Frank, 144
Churchill, Charles White, 535
Clarke, James Alexander Jr., 964
Clarke, James Thomas Adam, 881
Clarke, William Cogswell, 1301
Clay, Thomas Arthur, 1407
Cleland, James S., 67
Cloftne, Morton, 1239
Clutch, Bert Daniel, 67
Cochran, Thomas Preston, 367
Cogan, Jesse Franklin, 780
Cole, Bedau A., 616
Cole, William Hallett, 881
Coleman, Francis James, 780
Collins, Asa Weston, 881
Collins, Charles David, 535
Collins, Daniel William, 965
Compton, Booton Stover, 451
Cone, Daniel Newman, 451
Conner, William Henry, 1301
Conrad, Thomas Kennerly, 1106
Cook, John Franklin Dufferin, 1106
Cook, William Wilder, 965
Cooley, Raymond Lawrence J., 535
Cooney, John Philip, 780
Cooper, Charles P., 780
Cordes, Augustus Ernest, 1301
Cormier, J. Arthur, 451
Costello, William Edward, 881
Cowger, Robert, 780
Craig, Sara: See Buckley, Sara Craig
Crance, Charles Thomas, 616
Cranford, Oscar G., 210
Crawford, Edward F. W., 1301
Cregor, Frank W., 67
Crile, George Washington, 209
Crippen, Carter James, 144
Crittenden, Charles Briggs, 697
Crozier, Alfred W., 144
Cruikshank, Hamilton Chalmers, 780
Crump, John Moore, 67
Crutcher, William E., 965
Cuddy, Oren Louis, 1301
Cudworth, Linn M., 451
Cullum, John Elwood, 367
Culp, Charles W., 780
Cunningham, John Wesley, 1407
Cuono, James John, 1106
Currie, Archibald Nelson, 881
Curry, George Bradford, 278

D

Darling, Arland Lewis, 780
Dashiell, Nicholas Leeke, 780
Davenport, William Leslie, 452
Davis, Alan Morgan, 965
Davis, Charles Clarence, 210
Davis, Charles Louis, 1301
Davis, Edward Gates, 881
Davis, Edward Jackson, 1106
Davis, George H.: See Davis, George Hicks
Davis, George Hicks, 210
Davis, James Taylor, 144
Davis, Theodore Benjamin, 965
Day, Arthur Kehew, 697
Day, Ewing Wilber, 209
Day, Lemuel Edward, 368
Deadwyler, Madison Pope, 881
Deeley, Benjamin Charles, 698
Deering, Wayland Whitten, 965
De Mand, Francis Asbury, 1302
Dennison, Archibald Sayre, 1106
Deren, Solomon David, 1239
Derenkowsky, Solomon D.: See Deren, Solomon David
Detling, Frank E., 697
Detrick, Arthur Ward, 367
Devlin, James Lawrence, 698
Diamessis, Lambros G., 1106
Didenhover, Chester, 1408
Dillman, John Vardeman, 1239
Dillon, Joseph Jr., 617
Dixon, Robert Brewer, 452
Dobson, Hervie Alden, 210
Doe, Albert Edward, 1302
Doering, Edmund Janes, 1407
Donovan, Cornelius J., 881
Donovan, Henry Trawick, 367
Dorrance, Samuel Wesley, 964
Doubleday, Charles E., 780
Dougherty, William John, 67
Downey, John Otho, 1240
Downing, Albert, 278
Doyle, William R., 1106
Doyne, Charles Russell, 210
Driscoll, Joseph Alexander, 1302
Duane, Joseph Francis, 698
Duke, William Casper, 210
Duncan, Marion Alexander, 698
Dunklin, Frank Hamilton, 698
Dunn, Frank P., 780
Durbin, Howard Paul, 1240

E

Earle, Joseph Baylis, 1302
Early, Leverette Saltanstall, 367
Eastman, Joseph Rilus, 144
Easton, Elwood Tracy, 1173
Eaton, Frederick M., 67
Edrington, Darius, 698
Edwards, Joseph Benjamin, 367
Edwards, Lewis H., 1302
Eisenheimer, Adolf A., 1302
Elliott, Jabez Henry, 209
Elliott, Mary Hughes, 1408
Ellsworth, Ephraim Elmer, 144
Ellsworth, Samuel Walker, 210
Elward, Joseph Francis, 881
Enders, Thomas Burnham, 1240
Ernst, George R., 367
Eskey, Leonard, 1106

F

Faltitschek, Fritz, 1106
Farr, John Clark, 881
Faulkner, Morris Ritner, 1106
Feinberg, Jacob Nathaniel, 1302
Ferguson, John Ralph, 67
Ferguson, Lee Hollister, 697
Ferrara, Louis Joseph, 780
Fisher, Harry Fleming, 1408
Fiske, George W., 367
Fitts, Charles Cowdrey, 144
Flannagan, John Edward Knight, 367
Flenner, Merle d'Aubigne, 780
Flynn, Richard Austin, 210
Flynn, Thomas H., 144
Foley, James Vincent, 881
Fomorin, John Louis, 1106
Forbes, Gilbert de Leverance, 1173
Foringer, Henry H., 451
Franklin, Edward Alfred, 535
Franklin, Rufus Cecil, 278
Fraser, John Frank, 1173
Freedman, Bernard, 210
Freeman, Charles, 1106
Freeman, Elmer Bert: See Freeman, Elmer Burkitt
Freeman, Elmer Burkitt, 451
Frei, Wilhelm Siegmund, 881
Freid, Woosha Berkowitz, 698
French, Albert Lincoln, 278
French, Ralph Winward, 278
Friedman, Lawrence Eugene, 1106
Frothingham, Herbert Hazeltine, 616
Fruchthandler, Edward Alfred: See Franklin, Edward Alfred
Fuldner, Louis, 367
Fulliam, Edmond Bland Ballard Jr., 881
Fuson, Thomas Sewell, 965

G

Garner, Royal L., 780
Garner, Thomas Monroe, 367
Garner, William Martin, 144
Gates, Ernest A., 1106
Geisler, George John, 368
Geron, Thomas Cary, 780
Giannini, Attilio H., 1302
Gibbs, John Phillip, 278
Gillespie, Allen C., 1106
Gilleland, Clarke Houston, 368
Gillett, Lindon Lemuel, 278
Gilley, Henry Walter, 965
Gillis, Alexander James, 1106
Githens, Lester McCutcheon, 144
Glass, Alonzo, 780
Glover, Clark S., 780
Goba, Bertha: See Macbeth, Bertha Goba
Goldhammer, Adolph, 535
Goldman, James M., 452
Goltra, John Nelson, 535
Goone, William N., 368
Gordon, Charles Judson, 278
Gordon, John B., 1106
Graham, Rossner Enders, 67
Graves, Asbury Coke, 1408
Graves, Roscoe S., 210
Gray, Earl P., 1302
Gray, William Laurence, 144
Green, W. O., 1106
Greenwell, Richard H., 278
Greer, James Richard, 278
Griffin, J. L., 278
Griffith, Emery Fremont, 278
Griffith, Sheridan C., 698
Griffiths, Thomas Edward, 965
Grimm, Alva Silas, 535
Grist, Joseph Franklin, 781
Groeschel, Lesser Bernhardt, 1302
Grosvenor, Lorenzo, 964
Grout, Samuel Eugene, 1106
Gunkel, Frederick Carl, 882

H

Hagler, Edward Cleveland, 278
Hale, Claude Edwin, Jr., 1240
Halford, Joseph W., 278
Hall, Channing, 452
Hall, Leon Quitman, 781
Hall, Oscar Blin, 210
Ham, Charles Burley, 1408
Haman, William Albright, 535
Hamblin, Alva Curtis, 452
Hames, Herbert T., 535
Hamlett, William Stephen, 1408
Hamm, Charles Webster, 67
Hammons, John Mathew, 1106
Hamrick, Martin Passmore, 1408
Hanbidge, Thomas Henry, 1107
Handley, Charles A., 452
Harding, Edward Mitchell, 535
Hards, Ivan Bowman, 368
Harker, H. K., 1107
Harkness, Grove, 452
Harmon, Orlando S., 210
Harmonson, Charles G., 1107
Harper, Charles Schuyler, 1240
Harper, Homer Benton, 210
Harper, William Heston, 278
Harpole, Charles Benton, 781
Harris, Allan, 452
Harris, Baynard Lawton, 67
Harris, Elmer Garrison, 1302
Harris, James, 67
Harris, Raymond Victor, 1107
Harris, Urban Bunyon, 1107
Harris, Wayne Adelbert, 210
Harris, William Gillespie, 781
Harsha, William McIntire, 1408
Hartley, Frank A., 1107
Hartman, Serglus Alexander, 144
Hastings, Thomas Wood, 367
Hatfield, Hazel May, 452
Hatfield, John Richard, 68
Hay, Lewis Scott, 965
Hayden, John Joseph, 210
Hayes, Leo Zeno, 535
Hedges, Adda: See Brady, Adda T. Hedges
Helmer, Fred Stanley, 210
Henderson, James Gordon, 278
Hendricks, Francis Royal, 698
Henning, Walter Hannibal, 1107
Henry, Charles, 144
Henry, Hattie Belle: See Short, Harriet Belle Henry
Henry, Richard Taliaferro, 781
Herbert, Christopher Henry, 781
Herman, William Anthony, 1408
Hermann, George Frey Sr., 1302
Herring, Robert G., 144
Herzog, Edward, 781
Herzog, Edward Abraham: See Herzog, Edward
Hess, Hiram A., 211
Hessler, Robert, 452
Hickey, John Joseph, 1107
Higgins, Allen Fitch, 1240
Highsmith, Seavy, 278
Hill, Amon S., 452
Hill, Cephas Cole, 67
Hoagland, Charles Clinton, 1302
Hoelscher, William A., 368
Hoffman, Joseph Ellis, 1408
Holcomb, Leander S., 211
Holden, James E., 1107
Holladay, Gray Godwin, 278
Holley, George Michael, 368
Holliday, George Arthur, 452
Holmes, Walter B., 278
Holmson, Holm, 965
Holtz, Kenneth Jastram, 781
Hood, William Henry, 211
Hopkins, George Thomas, 781
Hopkins, William Bouldin, 781
Hornbeck, Arden Cline, 780
Horne, John H., 278
Hornsby, Isaac H., 452
Howard, James Manney Jr., 211
Howard, Russell John, 696
Howell, Alvah Alexander, 1302
Huber, Simon Andrew, 781
Huff, John Preston, 1302
Huffaker, Duke Hunter, 1107
Hughart, Joseph R., 1107
Hughes, Henry G., 1408
Hughes, Nathan J., 145
Hulbert, Frances: See White, Frances Hulbert
Humphrey, Amy Rawson, 1107
Hunt, T. Dwight, 1173
Hunt, Taylor Dwight: See Hunt T. Dwight
Hunter, John Austin, 781
Hurd, Charles Addison, 67
Huss, J. Frank, 781
Hutchinson, Herbert S., 145
Hutchinson, Randall, 211
Hutto, W. J., 452
Hyams, Joseph Andrew, 881

I

Ingerman, Sergius M., 1302
Ingraham, Amanda Elizabeth, 145
Irish, James Herbert, 1107
Irvine, Joseph Clinton, 145
Irwin, Andrew Jackson, 1240
Ives, James E., 530

J

Jack, Edwin Everett, 278
Jackson, Bilyford R., 67
Jackson, Egerton Sowerby, 67
Jackson, Flora Cornelia Moss, 882
James, Edwin Forrest, 616
James, William Lloyd, 616
Janney, Frances S.: See Stoddart, Frances Sumner Janney
Jenkins, Felix S., 1107
Jester, Homer Bates, 1240
John, Clifford C., 781
Johnson, Franklin Paradise, 1173
Johnson, John Mitchel Jr., 278
Johnston, Bertie Rozel, 535
Jones, James Arthur, 535
Jones, Jesse Isaac, 616
Jones, J. Leon, 781
Jordan, George M., 781
Joslin, Edward, 145
Joyce, Leo Harold, 279
Jungmann, Julius, 965

K

Kahn, Maurice, 279
Kavinoky, Samuel, 781
Kazanjian, Hampar Boghoss, 68
Kazanjian, Hampar Paul: See Kazanjian, Hampar Boghoss
Keesee, John Richard, 535
Keettel, William Charles, 68
Kehl, George W., 1408
Kell, Wylie Little, 1107
Keller, Amelia R., 882
Kelly, Clarence Andrew, 211
Kelly, Howard Atwood, 277
Kelly, Joseph Charles, 535
Kelly, Michael Bernard, 965
Kenealy, Joseph Henry, 368
Kent, Henry Cowles, 882
Kew, Maud Emilie Taft, 211
Kilborn, Mary Alfretta: See Kilborn, Retta Gifford
Kilborn, Retta Gifford, 698
Kincheloe, Enos E., 279
King, Robert Bruce, 211
Kingsley, Rolfe, 1240
Kipp, August E., 279
Kirk, Robert S., 452
Kistler, George Boerstler, 1302
Klauser, Frank Emil, 781
Klebs, Arnold Carl, 1301
Klein, Valentine John, 535
Klinefelter, Marion Luther, 68
Knapp, Henry Clay, 452
Knapp, Hiram L., 536
Knowles, Robert Kenebrough Black, 781
Knox, George Alexander, 1107
Kohler, Horace W., 781
Kottcamp, Edward Charles, 1107
Krause, Charles Henry, 1408
Kruse, Fred Herman, 781
Krusen, Wilmer, 697
Kugel, Isidore Harry, 452
Kunkel, George B., 535
Kussman, John August, 1240
Kyvig, Knute Andreas, 68

L

La Grone, David Charlton, 781
Laighton, Florence Marion, 1107
Laird, George Samuel, 279
Lane, John Alexander, 145
Lane, Sir William Arbuthnot, 273, 1299
Langsdale, John Marion, 616
Lanham, Fannie, 1240
Lanzer, Albert H., 1240
Lapsley, Robert McKee, 882
Large, Charles Lester, 1240
Latimer, John Newton Franklin, 882
Laughlin, Elmer O., 368
Lawhorn, George Washington, 616
Lawler, Albert Joseph, 1302
Layton, Oliver Morton, 452
Le Baron, Charles Jr., 1107
Lee, William Andrew, 211
Lefrak, Louis, 1408
Lehmayer, Martin N., 965
Lemons, James M., 1302
Lenker, David Edward, 882
Lennon, John, 1107
Lentz, Clarence M., 1302
Leonard, Edward J., 1408
Lessenger, William Sherman, 279
Lewis, Archibald Stuart, 882
Lewis, Orville Nelson, 781
Lewke, Otto W., 1240
Lieurance, Edward, 616
Light, Mason B., 452
Lightner, Frank J., 452
Lightstone, Albert Maxwell, 536
Lind, Carl Olander, 1107
Linden, Washington E., 1240
Lindersmith, Henry Clay, 367
Lipshutz, Joseph, 1107
Lloyd, Hiram John, 882
Lochner, George Mitchell, 145
Logan, John Othello, 1240
Logan, Samuel Gilmore, 536
Logan, William Hoffman Gardner, 1301
Long, Brady Forrest, 781
Long, Edgar Miller, 1302
Long, Herbert Everett, 616
Long, Thomas Jonathan, 1173
Longe, Bert Duane, 452
Longsworth, Charles Reese, 452
Louie, Edward Chung, 1107
Lovering, Frank Samuel, 617
Luce, Charles Allen, 882
Lucy, John Joseph, 536
Luedeke, Paul Otto, 1173
Lustig, Emil, 1302
Lyford, George, 1302
Lyons, Ray, 1107
Lypps, Bertha Louise: See Bachelder, Bertha May Louise Lypps

M

Macbeth, Bertha Goba, 452
McCall, Harry Kenyon, 882
McCarty, George Skinner, 67
McClard, Albert L., 617
McColl, John, 1107
McCracken, Cicero M., 368
McElroy, James Bassett, 1301
McFarland, Jerry James, 68
McIntire, John Current, 1302
McKane, Harvey W., 1107
McKee, Samuel Hanford, 67
Mackey, Albert Newton, 882
McKiggan, John, 211
McKinnon, William Rennie, 68
MacLeod, Harry Found, 536
McLeod, Thomas, 368
MacMullen, John William, 68
McNamara, Sylvester James, 964
McWilliams, Oscar Eugene, 1107
Madden, Pearl Reed: See Madden, Reed
Madden, Reed, 536
Madill, Grant Charles, 1239
Malee, Francis Harold, 1108
Malone, Eugene Y., 145
Maluf Pasha, Major General Amin Fahd, 1236
Mancill, George Jefferson, 882
Maney, John Joseph, 965
Manion, William Orville, 781
Mann, Robert, 965
Marks, Albert James, 781
Marks, Saul, 536
Marks, Solomon: See Marks, Saul
Markwort, Herbert Edward, 368
Marsh, Ralph Heminway, 452
Marshall, Joseph Chandler, 368
Marshall, Louis Lynn, 781
Martin, Frank F., 145
Martin, Leo Paul, 279
Martin, Sterling Price, 1302
Martin, Van Buren, 1408
Martin, Victor Kinnaman, 1108
Matassarin, Leon, 452
Mathews, Floyd Osborn, 536
Matter, Orson Eugene, 145
Maxwell, Herbert Chamberlain, 536
Mayberry, Charles Bradford, 965
Mayne, Henry Hamilton, 368
Meanes, Lenna Leota, 144
Meisle, Frederick Aaron, 145
Melrose, Maurice Carver, 536
Mendoza, Joseph William, 883
Menefee, Americus Vespucius, 1302
Mengel, Willard Geist, 964
Merdinyan, Ardashes H., 279
Merriam, Charles E., 536
Messenger, Freeman Simeon, 882
Metcalf, Henry P., 368
Mettel, Howard Bennett, 144
Metzger, Charles Francis, 1108
Mickle, Charles H., 617
Miles, Samuel Stockton, 279
Miller, Clifton Meredith, 1239
Miller, Henry Taylor, 1302
Miller, Lucas P., 1240
Miller, Walter McNab, 617
Miller, William Markle, 452
Minear, Alney Neal, 1302
Mitchell, George W., 1108
Mitchell, Joseph David, 1240
Mitchell, Robert Levis, 368
Monson, George Lone, 452
Montgomery, Edward Sanford, 279
Montgomery, Robert Lee, 781
Moody, Samuel Shaw, 1108
Moore, Brutus Caesar, 1302
Moore, Floyd Napoleon, 1408
Moore, Sydney Clayton, 1108
Moorehouse, William George, 145
Morehouse, Edith Taft, 279
Morgan, Joseph D., 279
Moriarty, Julia Mary Lombard, 1302
Morris, John Harold, 67
Morse, Ralph Luther, 1302
Moss, Flora Cornelia: See Jackson, Flora Cornelia Moss
Mulford, Arnold Edwards, 68
Mulvey, Nicholas L., 781
Munger, Deo Clifton, 68
Murfin, James Gordon, 368
Murfree, Matthias Brickell, 1108
Murphy, Arthur Irwin, 781
Murphy, Marion W., 1408
Murray, Alexander, 965
Musselman, James T., 965
Myers, John Franklin, 617
Mynns, Prince Wellington, 368

N

Nash, Harry Charles, 965
Nast, Henry H., 68
Neal, Paul Nathaniel, 781

Nellson, George W., 536
Nelles, Andrew B., 279
Nelson, Harlan Forest, 965
Nelson, John S., 279
Neufarth, La Fayette, 536
New, J. E.: See New, James E
New, James E., 452
Newcomb, Elizabeth Naomi, 368
Nielson, Alexander J., 882
Noble, Charles Samuel, 145
Norris, Henry Martin, 1108
Norrish, William Henry, 882
Northrup, Samuel Gaines, 1408
Norton, James Slaughter, 617

O

O'Connor, Dorothy Kathryn, 145
Odom, William Walton, 1108
O'Drain, Thomas Ignatius, 536
Olafson, Kristinn, 882
O'Leary, Thomas Joseph, 1239
Olef, Isadore, 536
Oliver, C. W., 617
Oliver, John Rathbone, 451
O'Mara, John Aloysius, 882
O'Rourke, Charles Borromeo, 1302

P

Pal, Darbari Ram, 536
Palmer, Edward R., 145
Panettiere, Andrew Henry, 1108
Papazian, Levon, 882
Park, Willard Elizabeth, 1240
Parke, Milton Jay, 1302
Parmenter, George Harvey, 279
Paterson, Robert Hopkin, 211
Pantler, Ermin Anthony, 617
Pearson, Norman, 68
Pennington, Thomas Jackson, 698
Perret, Frank Placide, 882
Perry, Benjamin Cecil, 781
Peters, Don Preston, 882
Peters, Fletcher Sidney Edward, 536
Peterson, John Adna, 965
Pfahler, James Fred, 1302
Phillips, Arthur Madison, 279
Phillips, John Thomas, 698
Philpot, James Milton, 536
Pierce, Don, 1303
Piercy, Arthur Thomas, 368
Ping, Clell, 1408
Pinkston, John W., 536
Pinney, Almon William, 536
Pinson, Marion, 1408
Pirie, Alexander Fraser, 781
Pitts, Francis Marion, 698
Platt, Otis Russell, 536
Plunkett, John, 965
Poe, John D., 1408
Pool, Henry Jacob, 1408
Pope, John Hunter, 1303
Porter, Ernest Boring, 145
Porter, George Franklin, 882
Porter, Katherine, 1303
Potter, Mary Goddard, 1108
Powell, Isaac William, 279
Powell, John Edmond, 781
Price, John Joseph, 68
Price, J. Lampton, 1240
Priest, James R., 965
Prowell, James William, 211
Puente, Jose J., 696
Purefoy, George William, 1303
Putzel, Leopold, 536

Q

Quinan, Clarence, 882

R

Rabenoych, Moses D., 145
Radasch, Henry Erdmann, 210
Radcliffe, Jean A. Vernier: See Vernier, Jean A.
Radcliffe, William Drummond, 452
Ranger, Lucien E.: See Ranger, Lucien Henry Arthur
Ranger, Lucien Henry Arthur, 68
Rathbun, Frederick Judd, 698
Rauschenbach, Paul Emil, 1303
Read, Harry Lyon, 536
Reading, Rose M. T., 781
Redding, Alexander H., 68
Reed, Henry Davidson, 68
Reed, James Denny, 1303
Reese, Francis Gurney, 1303
Reeves, Eber, 617
Reeves, George L., 1240
Reitman, Ben L., 211
Renick, James Daniel, 279
Rennick, James Daniel: See Renick, James Daniel
Reynolds, Charles John, 698
Reynolds, Harry Campbell, 68
Reynolds, Harry Kelchner, 617
Reynolds, John Franklin, 1303
Reynolds, Michael Thomas, 1408
Reynolds, Theron S., 882
Reynolds, Winifred Brenda, 211
Ribble, George B., 211
Rice, Lloyd Wilson, 536
Richard, Florence Stephen, 145
Richardson, George Harris, 368
Riethmuller, Albert Herman, 1108
Riggles, John Lewis, 211
Riley, William Bernard, 1303
Ringgold, George W., 1240
Risley, Edward Henry, 964
Ritchie, Peter Anthony Jr., 68
Robb, John Morrow, 68
Robbins, Charles Henry, 68
Robbins, Eugene Stanley, 882
Robertson, Alexander Peter, 145
Robertson, William A., 882
Robinson, Benjamin Travis, 698
Robinson, Heber Edward, 536
Robinson, Howard Thomas, 368
Roebuck, Linn L., 698
Rogers, Fred King: See Rogers, Frederick King
Rogers, Frederick King, 452
Rollins, Edmonds Droke, 781
Roman, Benjamin R., 698
Romanowitz, Benjamin: See Roman, Benjamin R.
Rondeau, Albert Henry, 617
Root, Emerson Frank, 780
Rorke, John Henry, 617
Rosanoff, Aaron Joshua, 277
Rose, David, 617
Rosenberg, Aaron Joshua: See Rosanoff, Aaron Joshua
Rosenberger, Francis Emerson, 1303
Rosenbluth, Jacob Coby, 1303
Ross, Frank Augustus, 145
Ross, Fred Ernest, 781
Ross, Hendric Arnold, 536
Ross, James Thweatt, 536
Rowland, Leslie W., 272
Rowland, Peter Whitman Jr., 780
Rowland, Whitman: (See Rowland, Peter Whitman, Jr.)
Ruddell, Benson, 145
Ruff, S. P., 145
Ruiz, Joseph Francis, 782
Ruland, Arthur Sylvester, 617
Rupe, James F., 68
Rupprecht, Charles H., 617
Rush, James C., 279
Rusmiselle, Leslie Tanguary, 617
Russell, Solodus L., 882
Ruth, Aaron Leldy, 617
Rutledge, Henry Middleton IV, 882

S

Safford, Henry Towne, 1408
Samuels, Abraham: See Samuels, Abram S.
Samuels, Abram S., 1303
Sangster, Walter Alfred, 211
Sarazin, Frank Charles, 698
Sarli, Pietro, 782
Sarma, Pashupati Joseph, 698
Sass, Gustav, 782
Satenstein, David Lawrence, 1407
Sauter, Martin John, 698
Savage, Albert Lytleton, 211
Sawyer, Edmund Houghton, 965
Saylor, Edwin Stanton, 145
Schaffer, Howard William, 1303
Scharf, Charles Edward, 882
Scheidler, Joseph, 782
Schemer, Ernest, 145
Schiller, A. Noah, 278
Schiller, Abraham Noah: See Schiller, A. Noah
Schmelkes, Franz C., 447
Schmidter, William Charles Sr., 782
Schott, Harry Johnson, 279
Schulze, Margaret, 964
Schumacher, Leo Sebastian, 782
Schwartz, Albert, 782
Seabrook, Herbert Ulysses, 368
Seafers, Charles Frederick, 68
Sears, Edgar Allison, 1240
Sears, Eloise Augusta, 68
Sebert, Louis Joseph, 451
Sefton, Wilfred, 452
Selfridge, Clarence Mars, 68
Sener, Walter Jordan, 1303
Shafer, Harry Summers, 1108
Shaffer, John Thompson, 1303
Shaffer, John William, 452
Shanks, James C., 211
Sharp, Alexander A., 782
Shattinger, Charles, 782
Shattuck, Robert Parker, 782
Shelly, Solomon Thomas, 1240
Sherman, Elmer Emmett, 1408
Sherman, Irving, 882
Sherrill, Carl A., 782
Shiell, Hirsh Hyman, 68
Shilkovsky, Hirsh Hyman: See Shiell, Hirsh Hyman
Shira, Donald Da Costa, 697
Short, Harriet Belle Henry, 1303
Silberschein, Eli, 1240
Simkins, James F., 279
Simon, Frederick Casimir, 780
Skeel, Arthur Julius, 535
Slattery, William H., 145
Slayton, Louis E., 145
Smith, Edwin Dudley, 882
Smith, Frank Pulliam, 452
Smith, Frederick James Cunningham, 279
Smith, Ira Mason, 882
Smith, Neulan B., 1408
Smith, Richard Anderson, 782
Smith, Robert Lee, 211
Smoyer, Henry, 1408
Snider, Roy James, 211
Snodgrass, William Anderson, 964
Snowden, Percy Clinton, 1303
Southworth, Varnum Cochran, 1240
Spalding, Alfred Baker, 210
Sparkman, James Ritchie, 882
Speirs, George Omar, 1303
Spicer, John, 68
Spicer, Joseph H., 211
Spinney, Charles Noble: See Noble, Charles Samuel
Sprague, Ezra Kimball, 1173
Stack, James Wesley, 1303
Stack, Joseph Francis Xavier, 1303
Standerwick, Henry Fischer Jr., 698
Stanley, Clarence J., 1173
Stark, August, 782
Steele, John Gurdon, 883
Steele, Robert G., 883
Stein, Albert, 368
Stein, Harry, 211
Stephenson, Robert Mills, 211
Stern, Henry Sycle, 782
Stettauer, Joseph Lewis, 965
Stewart, Clarke Wallace, 1108
Stewart, Earl Minor, 1303
Stewart, Forrest Ray, 883
Stickney, Edwin Pattyman, 883
Stidham, John Henry, 965
Stillman, Frank Louis, 782
Stimus, Howard George, 883
Stites, Frank Montgomery, 883
Stixrud, Thomas Thomassen, 782
Stoddart, Frances Sumner Janney, 883
Stofer, John William, 883
Stokes, Harry Bayliss, 617
Stolle, Francis, 782
Stone, Edward Raymond Jr., 211
Storgaard, Henry, 68
Storm, Walter E., 279
Strahan, Charles Samuel, 965
Strelt, Ernest Hamilton, 279
Suggars, Harold J., 1103
Sullivan, Clarke, 1239
Sullivan, Cornelius Francis, 782
Sullivan, George Clark: See Sullivan, Clarke
Sullivan, George Clarke: See Sullivan, Clarke
Sullivan, William Joseph, 1108
Swan, Russell Henry Jocelyn, 1103
Swartz, Albert E., 965
Swennes, Ole Samuel, 1108
Swett, Francis Huntington, 877

T

Taggart, Henry Hutchison, 145
Talcott, James L., 698
Tarrant, James Richard, 698
Taylor, Alfred H., 1108
Taylor, John, 1108
Teasley, Harry Eugene, 617
Temple, William Franklin, 698
Tetrault, Joseph Wilfrid, 536
Thomas, David Owen, 883
Thompson, Joseph Benjamin, 1108
Thomson, Frederick Llewellyn, 145
Threlkeld, Arthur Ellis, 211
Thum, Fred Charles, 782
Thurber, Elmer E., 782
Tinsman, Charles Mathias, 68
Titzel, Walter Randolph, 1108
Tornholm, Frank, 536
Tracy, Samuel Gately, 883
Trambley, Rose M.: See Reading, Rose M. T.
Trevena, William Arthur, 68
Trice, Hoyte Sale, 883
Tritch, John Charles, 883
Tucker, Hal Shackelford, 279
Tucker, H. S.: See Tucker, Hal Shackelford
Tule, Robert Bruce, 1108
Tunstall, William Massie, 211
Turner, Caswell C., 964
Turner, George R., 1108
Tyler, George Thomas Jr., 144
Tyree, Achilles Douglas, 145

U

Updike, Ernest Hampton, 452
Utley, Herbert Hector, 1108

V

Van der Beek, Charles Abram, 965
Vandergrift, Arthur Pickens Jr., 1173
Van Fradenburg, George A., 368
Van Loon, Wilson E., 1173
Van Patten, Edwin Hugh, 279
Vaughan, Harry James, 1108
Vaughn, Cecil Judson, 617
Vernier, Jean Archange, 536
Vernier-Bell, Jean A.: See Vernier, Jean Archange
Vigor, William C., 782
Vogel, Frederick George, 1173
Vogt, Robert Reynolds, 279
von Toll, Edward, 1303
Vrooman, Clarence David, 211

W

Waddell, Charles Walter, 1239
Wagner, Carl B., 1106
Wagner, Thomas H., 1108
Waldrop, William E., 1240
Walker, Harry Abram, 68
Walker, Norman, 205, 534
Walker, Robert Carroll, 883
Wallace, James Buchanan, 536
Wallace, James Edward, 68
Wallace, Joseph Francis, 1106
Wallin, Charles Curtis, 883
Walling, Cadow B., 536
Walser, Otto Theodore, 1303
Walter, Jacob, 368
Walters, Perry Trowbridge, 1240
Ward, Charles Howell, 692
Ward, David W., 782
Waring, Thomas Pinckney, 883
Warlick, Edward Spann, 1303
Watkins, George Maxey, 883
Watkins, James Albertus, 782
Watkins, J. A.: See Watkins, James Albertus
Watkins, Robert Earl, 616
Watson, William P., 211
Watts, Edward Everett, 279
Watts, Harry W., 452
Watts, Henry W.: See Watts, Harry W.
Weadock, Edward George, 211
Weaver, Herbert Dutton, 145
Webb, Harold Homer, 68
Welrich, Richard Ferdinand, 782
Weiss, Bernard, 1108
Welch, John Thomas, 1303
Welch, Joseph M., 1240
Wellbrock, Walter Balthasar, 1303
Weller, Miles, 883
Wells, James L., 145
Wells, Jay C., 883
West, Lightfoot A., 883
Westlake, Carolyn Louise: See Widdowson, Carolyn Louise Westlake
Wherry, Walter Joseph, 1407
White, Fletcher Kindry, 883
White, Frances Hulbert, 886
White, Hugh S., 1173
White, Walter Walton Jr., 883
Whitehead, Edward Watts Morris, 883
Widdowson, Carolyn Louise Westlake, 145
Wiley, Robert Minor, 1240
Wilkinson, Richard Powers, 368
Wilkinson, William Willing, 1303
Williams, Frank A., 782
Williams, Robert Hamliton, 782
Willis, John, 1408
Wilmer, Harry Bond, 535
Wilson, Lanson C., 883
Wilson, Ralph Rust, 1239
Winstead, John Armstead, 617
Wirt, William Douglas, 368
Wise, Philip L., 1240
Wiseman, Robert James, 617
Wolfe, Edward K., 698
Woltmann, Harro, 883
Woltmann, Katharine, 1240
Woodhouse, Samuel William Jr., 1303
Wright, James A., 211
Wrightman, A. Edgar Jr., 617
Wrork, John Horace, 279

Y

Yeomans, Lilian Barbara M., 965
Yerger, Charles Francis, 1173
Yerger, William Purnell, 1240
Young, Henry Charles, 1108
Young, James Byron, 883
Young, Thomas A. E., 883

Z

Zolnowski, Stanley John, 1240
Zon, Leo, 368

E

E & J RESUSCITATOR, Inhalator, Aspirator (Fox Model), 1219
EAR: See also Deafness; Hearing; Otolaryngology; Otorhinolaryngology
disability, prevention in industry; use plastic mold (ear stopper), [McCoy] *1330
Internal, probable labyrinthine vertigo, 162
Middle, Infection of: See Otitis Media
middle, neurinoma in, [Roberts] 1310—ab
Ringing in: See Tinnitus aurium
EASTER seals for crippled children, 1103
EASYLAX, O'D, 538—BI
EAU de Cologne: See Berlock Dermatitis
EBERHARD, HARRY M., honored, *Review of Gastroenterology* dedicated to, 272
EBERTHELLA typhosa septicemia, sulfonamides for, [Kanof & others] *14
ECHINOCOCCOSIS, crusade against, Argentina, 208
ECONOMICS, MEDICAL: See Insurance, health; Medical Service
ECZEMA, industrial, spontaneous desensitization [Koch] 87—ab
pyoderma; sulfathiazole in, reaction to, [Livingood & Pillsbury] *406
Varicose: See Varicose Veins
various types, ultraviolet rays for, [Council report), *127; *128
EDEMA: See also Ascites; under organ or structure affected as Brain; Extremities; Lungs
General or Universal, of New Born: See Erythroblastosis
of renal origin, treatment, [Lehnhoff & Binger] *1321
oncotic pressure in pathogenesis of, [Juncadella Ferrer] 157—ab
thrombocyte deficit test, [Maynard & Hollinger] *1195
EDUCATION: See also Children; Schools; Students; University
A. M. A.—N. E. A. joint committee on health problems in, (appointment to) 1228—OS; 1374—OS
Health Education: See Health
Symposium on Health Problems in, (Bureau report) 1374—OS
EDUCATION, MEDICAL: See also Graduates; Internships; Schools, Medical; Students, Medical; University
A. M. A. Annual Congress on, 263—E; (program) 269—OS; 678—E
A. M. A. Council on: See American Medical Association
Commonwealth Fund activities in 1942, 680—E
cooperative program of West Virginia U. and Medical College of Virginia, 877
Course: See also subhead: Graduate Course
course (circuit) in internal medicine, Okla., 61
course on cardiovascular diseases and gastroenterology at Mount Sinai, 1101
course on chemical warfare, N. Y., 532
course on Industrial and military medicine, (New York) 363; (Virginia) 364
course on industrial health in medical schools, (Council discusses) 1229—OS; 1372—OS
course on medical jurisprudence (Bureau report) 1376—OS
course on ocular surgery at George Washington U., 270
course on otolaryngology at Indiana U., 1100
course on psychoanalysis and psychosomatic medicine at Illinois, 270
course on public health and preventive medicine at Pennsylvania, 272
course reduced 1 year, Germany, 1360
course (refresher) on ear, nose and throat at Illinois, 690
course (study) on pneumococcus, Iowa, 531
curriculum (accelerated), coordinate Internships with, 56
curriculum (accelerated), relation to licensure, (Bureau report) 1375—OS
curriculum and other changes, British medical students advocate, 1104
Fellowships: See Fellowships
graduate, annual institute, Philadelphia, 448; 1235
graduate assembly, New Orleans, 691
graduate, cancer teaching day at Rochester, N. Y., 1102
graduate conference to train physicians for war industries, (Ind.) 531; (Mich.) 1101
graduate, continuation courses for practitioners, *967
graduate course, (annual spring, Va.) 1170
graduate course at Long Island, 1170
graduate course in internal medicine, 204
graduate course of American College of Physicians, 1101
graduate course on technics of using blood plasma, New York, 363; 1170
graduate dept. of medicine organized at U. of Florida, 1296
graduate industrial clinic (2nd), Wis., 1170
graduate lectures, (New York) 271; 609; 775
graduate lectures on psychoanalysis at Topeka, 1100
EDUCATION, MEDICAL—Continued
graduate lectures on venereal diseases, Miss., 1101
graduate, N. Y., 1404
graduate postwar, (Council report), 1397—OS
in municipal hospitals of London, 63
premedical, accelerate, (Bureau report) 1376—OS
premedical, as related to U. S. Army, [Dalton] *633; 678—E
premedical students, deferred by Selective Service, 131—E; 133
premedical study reduced at Maryland, 362
speeding up, Germany, 847
training physicians in and out of armed forces, A. M. A.-A. C. P.-A. C. S plan, 122s—OS; 1399—OS
U. S. Medical Academy, federal legislation on, 1380—OS
war and, Army-Navy Specialized Training Course, 55; [Elliott] *631; [Dalton] *633; [Diehl] *635; 678—E
war effect on hospital residents, 1094—E; 1288
war effort and, (Council report) 1396—OS
EFFICIENCY, how to get along with less help, [Holmblad] *820
EFFORT Syndrome: See Asthenia, neurocirculatory
EGGS: See also Embryo
consumption per capita, 1935-1936, [Stiebeling] *836
scrambled, acute sodium fluoride poisoning at state hospital, [Lildbeck & others] *826
whites of, and avidin in cancer and lymphatic leukemia, 92; [Rhoads & Abels] *1261
whites of, in high protein beverage, [Bauman & Gage] *1283
EGYPT, child mortality in, 614
EHLERS-Danlos syndrome, [Roca] 709—ab
EL PANEL Cuban Honey 699—BI
ELASTOPLAST support for vascular disease of extremities, [Maynard & Hollinger] *1198
ELBOW, persistent ulnar nerve pain after contusion, 382
tumoral calcinosis, [Inclan] *190
ELDERLY: See Old Age
ELECTRICITY: See also Electro—
device, Vitaphore, 618—BI
Hearing Aids: See Hearing aids
High Frequency Apparatus: See Diathermy
Refrigerator: See Refrigerator
Shock Therapy: See also Mental Disorders
shock therapy and organic heart disease, [Evans] 1307—ab
shock therapy, curare modifies, [Woolley] 543—ab
ELECTROCARDIOGRAPHY: See Heart
ELECTROCOMA: See Electric shock therapy
ELECTROENCEPHALOGRAM: See Brain
ELECTROMAGNETIC locator, foreign body (Moorhead) *123
ELECTRON Microscopy: See Microscopy
ELECTROPYREXIA: See Fever, therapeutic
ELECTROTHERMY: See Diathermy
ELEMENT, new, No. 85 "anglo-helvetium," Dr. Alice Leigh-Smith discovers, 695
ELIP, 69—BI
ELLIOTT, EDWARD C., statement at congress on medical education, 678—E
ELLIOTT treatment: See Pelvis
ELOESSER, LEO, visits Argentina, 696
EMBOLISM: See also Thrombosis
air, 381
air, in pneumothorax and "pleural shock," (Ormond) 790—ab
cerebral, sudden collapse with attack of severe precordial pain, 471
fibrinogen emboli from superficial burns, 596—E
pulmonary, after thigh amputation, high ligation of femoral vein, [Veal] *240; (reply: advocate early rising; avoid tourniquet) [Samuels] 700—C
pulmonary, bronchial factor in, [Jesser] 82—ab
pulmonary, cause of death in, [Hachmeister] 158—ab
pulmonary: clinical, experimental study, [Potts] 979—ab
pulmonary, treatment, [Evans] 623—ab
EMBRYO: See also Fetus
development in chicks and rats, vitamin E deficiency in mother effect on, 1285—E
effect of weather, season, climate, [Petersen & Mayne] *929
EMERGENCY hospital service, system for treating injuries, England, 613
medical field sets for U. S. Coast Guard at Chicago, 1225
medical night service plan adopted by medical society, Ohio, 60
Medical Service and nursing, 685
medical service (community), in industrial plant catastrophes, [Mould] 860—ab
medical service, duties in gas attack, 601
Medical Service, Pasadena reorganizes, 1359
medical service, Perry County, Ky., 684
medical service, simplification, 601
mobilization of motor vehicles, 1359
water supply program: OCD Circular Medical Series No. 26, 351
EMIGRE Physicians: See Physicians, foreign
EMOTIONS: See also Psychosomatic Medicine
disorders in chorea, 1186
peptic ulcer relation to, [Boles] *643; *644
EMPIRE Rheumatism Council cooperates with British Orthopedic Association, 963
EMPLOYEES: Employment: See Industrial Health work, workers
ENCEPHALITIS: See Encephalomyelitis; Meningoencephalitis
ENCEPHALITIS, EPIDEMIC, eastern, western equine, St. Louis types, antibodies; mosquitoes hosts of viruses; vaccines; control, [Hammon] *560
ENCEPHALOGRAM: See Brain, electroencephalogram
ENCEPHALOMENINGITIS: See Meningoencephalitis
ENCEPHALOMYELITIS, epidemic (Crouchet's disease), 450
scarlatinal, [Winkelman] 461—ab
toxoplasmic, [Cowen] 287—ab
toxoplasmic, diagnostic eye lesions, [Koch] 1178—ab
ENCHONDROMATA, Multiple Congenital: See Dyschondroplasia
contrast roentgenography in, [Taylor & McGovern] *1270
streptococcus viridans, on patent ductus arteriosus, [Touroff] 75—ab
ENDOCARDITIS, bacterial, effect of 7 sulfonamides, [Organ] 215—ab
bacterial, sulfonamide for, [Sutliff & others] *312*
subacute bacterial, peripheral aneurysm in, [Castex] 709—ab
subacute bacterial, sulfadiazine for, preventing renal obstruction, [Fox & others] *1147
subacute monilia, [Pasternack] 153—ab
ENDOCRINE GLANDS: See also under names of specific glands as Adrenals; Thyroid; etc.
Association for Study of Internal Secretions (meeting postponed), 272
ENDOCRINOLOGY: See Journals
ENDOCRINOLOGY, Pan American Congress of (3rd), 450; (postponed), 1103
research grants for, by National Research Council, 205
ENDOMETRIOSIS, perforating posterior fornical, [Ahumada] 85—ab
ENDOMETRIUM, Aberrant: See Endometriosis
corpus luteum action of adrenal cortex extract on, [Neumann] 296—ab
microscopic appearance in lactation amenorrhea, [Topkins] 1414—ab
studies after implanting testosterone, [Greenblatt] *20
"ENDOTOXOID tubercle" in pulmonary tuberculosis treatment, [Bridges] 625—ab
ENERGY Metabolism: See Metabolism, basal
Value of Food: See Calories
ENGINEER: See Sanitary Engineer
ENGLAND: See also British; Empire; London; Royal
Anglo-Soviet Medical Council provides translations of articles, 275
at War: See World War II
Britain thanks U. S. doctors for their aid, 57
medical aid to Russia, 695
ENRICH, iron-vitamin B, combination, 884—BI
ENTEROBIASIS: See Oxyuriasis
ENTEROCOLITIS: See Intestines, inflammation
ENVIRONMENT: See also Temperature
determining factor in embryo, [Petersen & Mayne] *929
ENZYMES: See also under names of specific enzymes
adenylpyrophosphate identical with myosin, role in muscle contraction, 347—E
EOSINOPHILIA and parasitic infection, 796
pulmonary infiltration, [von Meyenburg] 626—ab; [Kartagener] 893—ab
EPHEDRINE therapy for hypotension in spinal anesthesia, [Pasper & others] *27
EPHELIDES: See Freckles
EPIDEMICS: See also under names of specific diseases as Diphtheria; Keratoconjunctivitis; Pleurodynia; Rheumatic Fever; Smallpox; etc.
Argentine Congress on (1st) 450
Central Epidemic Control Board members, 762—E
control specialists graduated, 1291
diseases, fight against, Palestine, 779
diseases spread and war; rodent plague problem, (Geiger) 70—C
Prevention: See Immunization; Vaccination
EPIDEMIOLOGY, instruction in, 1291
EPIDERMOPHYTOSIS Interdigitalis: See Dermatophytosis
EPILEPSY attacks from calcified adrenals, dextrose and adrenal cortex extract orally, [Lintz] *505
electroencephalogram in, [Finley] 981—ab
petit mal attacks associated with menstruation, 630
petit mal attacks in lead poisoning from bullet lodged in sphenoid sinus, [Futch] *580
EPINEPHRINE, procaine hydrochloride with, as local anesthetic solutions, 224; 472
shock sign of adrenal pheochromocytoma, [Engel] 786—ab

EPINEPHRINE—Continued
test (Lewis-Perry) of contractility of skin capillaries, [Urrutia] 547—ab
vaporized solution of neosynephrine and, New York Academy report, ★759
ERGONOVINE, use of after labor, 223
ERGOSTEROL, irradiated, relation to A. T. 10, 518—E
ERGOT, use after labor, 223
ERGOTAMINE tartrate stimulates colon propulsive activity, [Atkinson & others] ★648
ERUPTIONS: See also under names of specific diseases as Measles; Scarlet Fever
bubble bath preparations as cause of rash, 1250
Creeping Eruption: See Larva migrans
diethylstilbestrol, 1116
generalized, from sulfathiazole locally in varicose eczema, [Cohen & others] ★408
new disease entity? [Bowdoin] 889—ab
postvaccinal, [Bloch] 466—ab
ERYSIPELAS in infants, sulfonamide therapy, [del Carril] 458—ab
treatment, ultraviolet, (Council report) ★126
ERYTHEMA from arc welding: use West Protective No. 88, 162: (correction) 365
Induratum (Bazin's Disease): See Tuberculosis indurativa
multiforme (hemorrhagic, fatal) after phenytoin sodium, [Ritchie] 458—ab
Solare: See Sunburn
ultraviolet rays producing, in treating dermatoses, (Council report) ★513
ERYTHREMIA: See Polycythemia
ERYTHROBLASTOSIS, congenital syphilis or, [Henderson] 218—ab
fetal, and Rh factor, [Fisk] 541—ab; [Boorman] 625—ab
ERYTHROCYTES, acclimatization to discontinuous anoxia and, [Stickney] 76—ab
Count: See also Polycythemia
count and hemoglobin, 472
equilibrium, oxygen effect on, [Reinhard] 1245—ab
formation, arsenic effect on, [Limarzi] 1245—ab
Sedimentation: See Blood sedimentation
ESCHERICHIA coli, disinfectants action on, [Hoyt] 465—ab
coli, hemolytic, in feces and vaccine therapy, 1420
coli infection, x-ray therapy, [Bisgard] 1243—ab
coli septicemia, sulfonamides for, [Kanof & others] ★14
ESOPHAGUS cancer, analysis of 473 cases, England, 962
cancer, surgery for, [Ferrari] 1182—ab
ESTRADIOL benzoate, metabolic effects, [Knowlton] 542—ab
lingual application, [Miescher] 85—ab
ESTROGENS: See also Estradiol; Estrone
corpus luteum action of adrenal cortex extract, [Neumann] 296—ab
Diethylstilbestrol: See Diethylstilbestrol
effect on breast cancer in rats, 962
excretion in gonadotropin treated amenorrhea, [Rydberg & Pedersen-Bjergaard] ★1117
fibroids induced by, [Lipschütz] (correction) 694
in sesame oil intramuscularly, tumors after, [Conrad & others] ★237
metabolism in men and nonpregnant women, [Pincus] 289—ab
natural vs. synthetic, dosage, [Freiheit] 1130—ab
solution of, (in oil) N. N. R., (Lakeside) 945
"spider" signs and, [Bean] 1412—ab
treatment of acne, [Lawrence] 152—ab
treatment of pregnant diabetic, 1420
ESTRONE treatment of coffee colored spots on face at menopause, [Rocca] 85—ab
treatment of ovarian insufficiency with decreased stature, [Albright] 786—ab
treatment of primary atrophic rhinitis (ozena), [Ruskin] 288—ab
treatment, of prostate cancer [Chute] 463—ab; [Creevy] 788—ab; [Chute] 980—ab
treatment of urinary retention, [Bazterrica] 793—ab
ETCHEBARNE, MIGUEL, appointment, 141
*tri*ETHANOLAMINE Treatment: See Burns
ETHER, bulk, shipping: label to read "Ether U. S. P. Not for Anesthesia," 948—E
in oil intramuscularly in treatment of asthma, [Maletta] 890—ab
ETHICS: See Privileged Communications
ETHYL AMINOBENZOATE, Anaesthesin Jelly N. N. R. (Winthrop) 593
*di*ETHYLSTILBESTROL: See Diethylstilbestrol
EUNUCHOIDISM: See also Castration
cryptorchism, delayed puberty and, [Schonfeld] ★179; ★181
effects of estradiol and testosterone, [Knowlton] 542—ab
preadolescent, testosterone in, changes personality, [Kasanin & Biskind] ★1317
treatment, gonadotropin; testosterone, [Heller] 1176—ab
EVAPORATED MILK: See Milk
EVIDENCE: See also Medicolegal Abstracts at end of letter M

EVIDENCE—Continued
American Law Institute Model Code of, (Bureau report) 1377—OS
expert, control of medical testimony: Minnesota Plan, [Hammes] 857—ab
expert testimony of physicians at Marmola trial, 1286—E
EXAMINATION: See American Board; Physical Examination (cross reference); State Board; etc.
EXANTHEMA: See Eruptions
EXERCISE: See also Athletics; Walking
blood pyruvic acid after, [Yanof] 1308—ab
muscular, and fatigue in disease, 1093—E
physical, for soldier-students and intellectual workers, 516—E; [Oberteuffer] 1409—C
total collapse after physical exertion, [Jokl] 454—C
EXHAUSTION: See Fatigue
Heat: See Heat
EXHIBIT: See American Medical Association; Art; Books; Nutrition
EXOPHTHALMIC Goiter: See Goiter, Toxic
EXOPHTHALMOS: See also Goiter, Toxic
pulsating; ligate carotid, also Dandy's direct method for, [Martin & Mabon] ★330
sign of Bright's disease, [Hanes] ★1152
EXPERT Testimony: See Evidence
EXPLOSIVES: See also Bombs; Munitions
military: toxicity, [McGee] 852—ab
EXTREMITIES: See also Ankle; Arms; Foot
Amputation of: See Amputation
crushing injury, [Bywaters] 82—ab
crushing limbs, renal impairment from [Eggston] 83—ab
dystrophy, post-traumatic: Sudeck's atrophy, [Miller] 81—ab
edema from prolonged immersion in cold water, [Lewis] 1311—ab
injuries of upper, from skiing, [Moritz] ★99
vascular stasis: thrombocyte deficit test, [Maynard & Hollinger] ★1194
EYEBROW dye, Dark Eyes, 307—BI
EYEGLASSES: See Glasses
EYELIDS, chronic blepharoconjunctivitis, intestinal origin, [Szerdahelyi] 982—ab
"Granular Lids": See Trachoma
retraction sign in toxic diffuse goiter, [Eden] 84—ab
EYES: See also Blindness; Cornea; Glasses; Ophthalmology; Pupils; Retina; Vision
accommodation, dark adaptation in urolithiasis? [Jewett & others] 566
defects and industrial employment, [Bartle] ★1002
Diseases of: See Conjunctivitis; Glaucoma; Iridocyclitis; Trachoma; etc.
floating opacities, 92
Gonorrhea: See Conjunctivitis, gonococcic
inflammations, focal origin, [Anastassoff] 793—ab
lesions (diagnostic) in toxoplasmosis, [Koch] 1178—ab
Pink Eye (shipyard): See Keratoconjunctivitis
Proptosis: See Exophthalmos
signs of Bright's disease, [Hanes] ★1152
signs of industrial poisoning, [Bonsib] 850—ab
surgery, course in, at George Washington U., 270
surgery on inferior oblique muscle, 1250
test for contrast medium sensitivity, [Archer] 978—ab
ultraviolet and other rays injurious effect on, (Council report) ★515

F

FABRICA, 1543-1943 and Vesalius, [Castiglioni] ★582; (celebration at New York Academy) 609; (exhibit at Cleveland Medical Library) 1297
FABRICS: See Clothing; Cotton; Nylon
FACE: See also Chin; Eyes; Lips; Mouth; Nose
Paralysis: See Paralysis
powder, black dermographism and, [Urbach & Pillsbury] ★485
FACTORY Workers: See Industrial Health; etc.
FACULTY: See Schools, Medical
FAINTING: See Syncope
FAIRCHILD Bros. and Foster, (Winthrop Co. takes over) 204; (Dr. Guild president) 959
FALLOPIAN Tubes: See Oviducts
FAMILIES: See also Children; Heredity; Infants; Marriage; Maternity; under names of diseases as Idiocy, amaurotic familial
income and medical service plans, (Bureau report) 1387—OS
rheumatic fever incidence in, [Ditkowsky & others] ★993
size and income vs. diet, [Stiebeling] ★835; ★836
FAMOUS Men: See Great Men
FARM: See also Rural
family diets, [Stiebeling] ★833; ★836
farmers' skin, result of ultraviolet radiation, (Council report), ★513
Security Administration (California Physicians' Service) 58—OS; (medical service plans) 1387—OS
FASTING: See Starvation
FAT: See also Acid, fatty; Lipids; Obesity; Oil; Oleomargarine

FAT—Continued
diet content for aged, [Tuohy] ★46
diet for pregnant and lactating women, [Ebbs] ★340
diet (low) in acne conglobata and perianal pyoderma, [Sutton & Marks] ★1344; (footnote 7) ★1346
diet (low) in liver damage, [Ravdin & others] ★322
diet plus choline chloride for icterus gravis neonatorum, [Danis] 544—ab
metabolism in acne vulgaris, [LeWinn] 374—ab
FATIGUE: See also Asthenia; Neurasthenia
fracture of tibia, [Hartley] 376—ab
in disease: oxygen intake; oxygen debt, 1093—E
Knox Gelatine, 884—BI
pernicious inertia, vagal stimulation causes hyperinsulinism; dextrose tolerance tests; atropine injection relieves, [Portis & Zitman] ★569
FATTY Acids: See Acid
FECES, Loose Stools: See Diarrhea; Dysentery
hemolytic Escherichia coli in; vaccine therapy, 1420
of lice, typhus transmitted by, [Löffler] 467—ab
poliomyelitis virus in, after inoculation, [Trask] 623—ab
urobilinogen daily output as "hemolytic index," [Miller] 215—ab
FEDERAL: See also United States
Aid; Funds; Grants: See United States government
Food, Drug and Cosmetic Act, evaluation of antiseptics, [Hunter] ★25
Income Tax: See Tax, Income
Legislation: See Laws and Legislation, federal and state (weekly summary)
Public Housing Authority (California Physicians' Service) 58—OS; 595—E (medical service plan for war workers) 1164
Workers: See United States employees
FEDERATION: See also societies at end of letter S
of American Societies of Experimental Biology cancels meeting, 205
of State Boards, (officers) 693
FEEBLEMINDED: See Idiocy
FEEDING: See also Diet; Food; Infants, feeding; Restaurant
aged, [Tuohy] ★42
FEES: See also Income; Wages
ophthalmologists to return portion to those in services, St. Louis, 532
x-ray and laboratory, new schedule, W. Va., 272
FEET: See Foot
FELLOWSHIPS: See also Scholarships
A. M. A.: See American Medical Association
Cinchona Products Institute research on quinine, 878
Commonwealth Fund, 612
exchange and travel, U. S. suspends, 204
Fox (Herbert) Memorial, 1235
Goldwater Fund for, in hospital administration, 960
Mickle (Charles), to Dr. Tatum, 960
Procurement and Assignment Service and, [Diehl] ★637; 678—E
statistics, ★1024; ★1025
FEMORAL Vein: See Veins
FENGER Lecture: See Lectures
FERMENTS: See Enzymes
FERROUS Sulfate: See Iron
FERTILITY: See Families, size; Impregnation; Spermatozoa; Sterility; Sterilization, Sexual
FETUS: See also Embryo; Infants, Newborn; Placenta; Pregnancy
cytoplasmic modification of genetic trends, [Petersen & Mayne] ★929
Death of: See Stillbirth
electrocardiography (clinical), [Goodyear] 155—ab
Erythroblastosis: See Erythroblastosis
microcephaly after pelvic irradiation in pregnancy, 54—E
parasitic sacral, remove from boy, [Gray] 460—ab
FEVER: See also Rheumatic Fever; Scarlet Fever; Typhoid; Typhus; etc.
Cerebrospinal: See Meningitis, cerebrospinal epidemic
Childbed: See Puerperal Infection
drug, due to sulfonamides, [Moeschlin] 157—ab; [Sutliff & others] ★307; [Dowling & Lepper] ★1193
high, liver deaths, [Heyd] ★736
Malta: See Brucellosis
Q: See Q Fever
Rat Bite: See Rat-Bite Fever
reactions in smallpox contacts, [Napier] 219—ab
Therapeutic: See also Protein therapy
therapeutic, diabetics response to, affects insulin resistance, [Greene & Keohen] ★174; ★175
therapeutic plus sulfathiazole (single combined) for gonorrhea, [Ferguson] 786—ab
therapeutic, plus x-rays for cancer, [Shoulders] 217—ab

FEVER—Continued
therapeutic, shock in, blood plasma treatment, [Prince] ★935
therapeutic, technic of inducing in gonorrheal arthritis, 714
Undulant: See Brucellosis
FIBRINOGEN emboli from superficial burns, 596—E
FIBROIDS: See Myoma
FIBROMA: See also Keloids
intrathoracic, [Dolley & Brewer] ★1132; ★1135
FIBROMYOMA: See Myoma
FIBROSARCOMA, intrathoracic, [Dolley & Brewer] ★1132; ★1135
FIELD Glasses: See Binoculars
FILARIA, transmitted by transfusion? 1250
FILMS: See Moving Pictures
X-ray: See Roentgen Rays
FILTRATE Factor: See Pyridoxine
FINGERS: See also Nails; Toes
fractures (gunshot), treatment, [Gusynin] ★952
sucking; serial dental study, [Sillman] 153—ab
thumbs, accidently vaccinated with smallpox; 3 ways to prevent [Tronmer] 966—C
FINLAY (Carlos) Institute of Americas, national postwar planning conference, 764—E; 769—OS; 1094—E
FIRE: See also Bombs; Burns
Boston disaster, 266; 363; 597—E; 684
formula for making canned heat for emergency use, 798
hazards, prevention in oxygen therapy, New York Academy report, ★757
FIREARMS: See Munitions; Wounds, gunshot
FIREMEN, workmen's compensation during industrial plant catastrophe, [Mould] 860—ab
FIRST AID: See also Ambulances; Emergency Medical Service; Stretcher
station (jungle) in Panama, 1223
FISCHER Award: See Prizes
FISHBEIN, MORRIS, war service of, 1363—OS
FISTULA, anal, role of anal glands, [Hill & others] ★742
arteriovenous, between ascending aorta and superior vena cava, [Barker] 291—ab
arteriovenous, pulsating exophthalmos, [Martin & Mabon] ★330
FITTE Foundation: See Foundations
FLATULENCE, effect on portal blood flow, [Mann] ★722
FLEAS transmit leprosy, [Munoz Rivas] 378—ab
FLEXNER Dysentery: See Dysentery
FLICKINGER, DON D., developed rescue method for pilots forced down at sea, 766
FLIES: See also Larva
Goodhue "bomb" to control, 846
predetermination of sex; establish genotypes, 348—E
FLIGHT Surgeons: See Aviation
FLORIDA, University of: See University
FLOUR: See also Bakers
white, enriched, nutritive value, [Williams & others] ★943
"FLU": See Influenza
FLUIDS: See also Beverages; Milk; Water
administration, [Bowman] 154—ab
Body: See also Ascites; Cerebrospinal Fluid; etc.
body, and Iodine, [Curtis & Fertman] ★425
FLUKES, diseases from dogs and cats, 713
FLUORIDES, acute sodium, poisoning at state hospital, [Lidbeck & others] ★826
FLY: See Flies
FLYING: See Aviation
FOGS, London, 186—ab
FOILLE Treatment: See Burns
FOLLICLE Stimulating Hormone, increased excretion, new syndrome, [Klinefelter] 152—ab; (correction) 548
FOOD: See also Beverages; Bread; Cheese; Diet; Eggs; Fruit; Infants, feeding; Meat; Nutrition; Restaurant; Vegetables; Vitamins
adequate, industrial hazards (benzene or lead)? [Cowgill] 868—ab
A. M. A. Council on: See American Medical Association
breakfast (adequate), what it should contain, [Wilder] 869—ab
Canning: See Canning
composition, National Research Council committee, 777
consumption, trends in U. S., [Stiebeling] ★931
Deficiencies: See Nutrition deficiencies
dehydrated, cookbook for army cooks, 600
Digestion of: See Digestion; Indigestion
Energy Values: See Calories
Federal Food, Drug and Cosmetic Act: See Federal
fortification with vitamins and minerals, (Council report) 1369—OS
fungi as, 64
habits of workers; survey, [Pett] 868—ab
handling carriers, 1156—E
in Wartime: See Food rationing; Medicine and the War; World War II
Infant's: See Infants, feeding
Lunch: See also Schools
lunch (adequate): cold vs. hot; "victory plates," [Goodhart] 870—ab
FOOD—Continued
lunch during midshift rest periods, [Bristol] 871—ab
lunch for workers, what it should contain, 1224
lunch, length of time for workers, [Pett] 868—ab
lunch (37-cent, 40-cent, 57-cent) in industrial plants, [Goodhart] ★93
meals, communal feeding, Royal Ordnance Factory, [Gunson] 1248—ab
meals, when should employee on 3:30 p. m. to 12 o'clock eat, [Cowgill] 868—ab
of birds, analyze stomach contents, 573—ab
Poisoning: See also Botulism; Cheese, infected
poisoning attacks, vigilance of U. S. Army in preventing, 1156—E
poisoning from sodium fluoride in scrambled eggs, [Lidbeck & others] ★826
poisoning in Germany, 200; 602
prescription for special diets, Los Angeles to issue, 439
protective value in cirrhosis, [Bollman] 1413—ab
rabbits for; not for pregnancy test, [Weisman & Coates] 1109—C
rationing and invalid diets, OPA order no. 13, 1157—E
rationing card, each for Swiss infants and children, 1237
rationing for expectant mothers, Germany, 1360
rationing for patients, Swiss, 1237
rationing restrictions increased to save shipping, England, 879
research section of U. S. Navy, 1358
restriction for aged, fallacy, [Tuohy] ★43
stamp program, [Stiebeling] ★837 (also footnote 111)
FOOT: See also Chiropody; Orthopedics; Shoes; Toes
Athlete's: See Dermatophytosis
diagnostic importance of walking on toes instead of soles, 897
disorders (functional), [Morton] 291—ab
hyperhidrosis, 796
immersion, [Ungley] 218—ab
immersion, treated by dry refrigeration, [Webster] 77—ab
injuries, from skiing, [Moritz] ★98
tumors, neurofibroma (neurinoma), [Hauser] ★1217
FOREIGN Countries: See Foreigners; under names of specific countries as Chile; England; Germany; Russia
Graduates: See Physicians, foreign
Protein Therapy: See Protein Therapy
War: See Spanish Civil War; World War II
FOREIGN BODIES, bullet in sphenoid sinus, lead poisoning from, [Futch] ★580
finder: the locator, [Moorhead] ★123; (funds given Navy to purchase) 1359
FOREIGNERS: See also Physicians, foreign
oath taken by aliens, 439
FORGERS: See Swindlers
FORMULARY, hospital, 8 rules for, [Smith] 1004
FORT: See Medicine and the War
FOSTER, C., B_1 vitamin hypoimmunity in poliomyelitis, 1284—E
FOUNDATIONS, American Foundation for Tropical Medicine, Inc., (to raise $100,000) 693
Buchanan (William), of Texarkana 5 year child health program, 1405
Cleveland Clinic, (lawyer named head) 61
Commonwealth Fund, (annual report) 612; (medical activities in 1942) 680—E
Cummings, and Detroit Orthopaedic Clinic merge, 139
Denison, (Dr. C. F. Herrick made honorary member) 204
Fitte (Rodolfo) prize for poliomyelitis research, 696
Foundation for Study of Cycles, (offers prize) 776; (A. M. A. representative) 1228—OS
Georgia Warm Springs, report, 1103
Industrial Hygiene, (report) 449; (new director: Dr. Kutscher) 1103
Kellogg (W. K.) fellowship at Univ. of North Carolina in health education, 525; 597—E
Macy (Josiah Jr.), (*War Medicine* made available to British institutions) 265; (to finance tropical medicine research) 271
Markle, (training tropical medicine specialists) 55; (tropical medicine study at Tulane) 449; (tropical medicine study at Army Medical School) 533
Mayo, (lectures) 876
Menninger, (report) 1298
National Foundation for Infantile Paralysis, (courses for training in Kenny method) 271; (annual report) 449; (represented at conference on postwar medical planning) 764—E; 769—OS; 1094—E; (grant to Yale Poliomyelitis Study Unit) 1296
Nuffield, (40 million dollar health foundation) 777
Nutrition Foundation, Inc., (activities) 1171; (advisory committee) 1298
Permanente, Henry Kaiser's, 595—E
Plotz (Ella Sachs), (grants available), 365
FOURTH Venereal Disease: See Lymphogranuloma, Venereal
FOWLER'S Solution: See Potassium arsenite
FOX (Herbert) Memorial Fellowship, 1235
FRACTURES: See also under specific bones
A. M. A. Primer (5th edition) being prepared, 1390—OS
compound, shock vs. infection in; treatment, 92
fatigue, of tibia, [Hartley] 376—ab
gangrene (noninfective) after, [Child] 372—ab
gunshot, of hands and fingers; treatment, [Gusynin] ★952
healing, sodium-beta-glycerol-phosphate effect on, [Sperling], 76—ab
industrial employment after, [Bartle] ★1002
ski injuries at Sun Valley, [Moritz] ★97
treatment at Emergency Hospital Service, England, 613
treatment, plated osteoperiosteal graft, [McBride] ★652
FRANCE: See French
FRATERNITIES: See Alpha Kappa Kappa; Alpha Omega Alpha; Nu Sigma Nu
FRAUDS: Fraudulent Salesmen: See Impostors
FRECKLES, ointment to prevent, (Council report) ★533
FREEZING: See also Frostbite
difference in tissue changes from heat vs. cold, 91
FRENCH children starving, 1104
Medical Science Association in Middle East, Palestine branch, 1105
FRIENDS, Society of: See Quakers
FRÖLICH'S Syndrome: See Dystrophy, adiposogenital
FROG Test: See Pregnancy, diagnosis
FROSTBITES divided into various grades similar to burns, 91
treatment, massage and dry refrigeration, [Bigelow] 469—ab
treatment, with cold, [Greene] 1113—ab
FROZEN: See Freezing
FRUIT: See also under names of specific fruits as Coconut; Grapefruit; Orange
Canning: See Canning
citrus juices reserved for war requirements, 525
consumption per capita, 1909-1939, [Stiebeling] ★832; ★836
juices for young children and expectant mothers, 275
Pectin: See Pectin
FUEL: See Heating; Oil, fuel
FUMIGACIN, anti-infective agent, [Smith] 851—ab
FUMIGATION of burrow openings to control plague, [Stewart] 283—ab
of pup tent with fine mist: Goodhue "bomb," 846
FUNDUSECTOMY: See Stomach surgery
FUNGI: See also Mold; Yeast
as food, 64
basal rot, plant hormones increased pathogenicity, 1284—E
culture medium, coconut water, [Picado T.] 295—ab
extracts, anti-infective agent, [Smith] 851—ab
higher, meningitis caused by, [Skogland] 1179—ab
identification, 898
Infection with: See Dermatophytosis; Mycosis
FURUNCULOSIS: See also Carbuncle
treatment, ultraviolet rays, (Council report) ★127

G

GAFFKYA tetragena: See Micrococcus tetragenus
GALACTAGOGUES; Galactorrhea: See Lactation
GALACTOSURIA: See Urine
GALLBLADDER: See also Bile; Bile Ducts
calculi and inflammation, liver function tests in, [Mateer & others] ★723; (discussion) 737
calculi, colic attack or coronary occlusion? 985
calculi, prevent liver damage and facilitate repair by diet, [Ravdin & others] ★322
calculi, Shreve's (Dr.) Anti-Gall-Stone Remedy, 884—BI
drainage in refractory paratyphoid A infection of liver and bile tract, 1315
function in cholecystohepato-hyperglycemic-glycosuric syndrome, [Portis] ★734
inflammation (acute), treatment; early or delayed operation? [Zollinger & Cutler] ★481
inflammation (traumatic), [Biehl] 158—ab
patients, nausea in those given diethylstilbestrol, [Abarbanel & others] ★1128
Surgery: See also Gallbladder excision
surgery, concept of liver deaths, [Heyd] ★736
GALLSTONES: See Gallbladder calculi
GALLUP poll says Americans do not eat wisely, 693
GAMSO, RAFAEL R., awarded Silver Star, 766
GANGRENE, difference in tissue changes from heat vs. cold, 91
gas, effect of sulfonamides, gramicidin, zinc peroxide, [Sandusky] 459—ab
gas; lecithovitellin diagnostic reaction, [Weed] 154—ab

GANGRENE—Continued
gas, sulfonamide ointments for, [Long] 307—ab
noninfective, after fractures, [Child] 372—ab
of nose, hemolytic streptococcus causes; treatment, [Costello] ★36; [Meleney] 37—ab
GARFIELD, SIDNEY B., Kaiser's Permanente Foundation, 595—E
GARLIC, Wiel Tablets, 884—BI
GARRAHAN, JUAN P., appointment, 208
GAS: See also under names of specific gases as Carbon Dioxide; Helium; Oxygen, etc.
Gangrene: See Gangrene
Mask: See Mask
Protection Service of U. S. Citizens Defense Corps, 600
specialist schools (state), organization, OCD Cooperations Letter No. 109, 767
Specialists, new courses for, 137
Warfare: See Chemical Warfare; Gas specialists
GASTRECTOMY: See Stomach surgery
GASTRIC Acidity; Resections; etc.: See Stomach Ulcer: See Peptic Ulcer
GASTRIN, function in ulcer, [Connell] 454—C
GASTRITIS: See under Stomach
GASTROENTERITIS: See Food poisoning
GASTROENTEROLOGY course at Mount Sinai, 1101
American Gastroenterological Association official journal, 1158—E
GASTROINTESTINAL TRACT: See also Digestive System; Duodenum; Indigestion; Intestines; Stomach
conditions, amino acids for, [Altshuler & others] ★165
liver and, [Mann] ★720; (discussion) 737
patients, mild hyperbilirubinemia in, [Johnson & Bockus] ★729; (discussion) 737
reaction to diethylstilbestrol vs. its dosage, [Abarbanel & others] ★1128
GASTROSCHISIS, [Watkins] 1415—ab
GASTROSCOPY: See Stomach
GASTROSPIRY vs. aerophagy, [Dillon] 457—ab
GAUCHER'S Disease, lipid metabolism disorders, [Davison] 290—ab
GAUZE packing in cigaret drain to introduce sulfanilamide, [Wise] ★666
GELATIN, growth promoting factor, [Jiménez Díaz] 468—ab
Knox Gelatine, 884—BI
GENERAL Electric X-Ray Corp., Army-Navy E to, 683
Motors Corp., processing technics in physical examination, [Wishard] ★810; 863—ab
GENETICS: See also Heredity
cytopiasmic modification of genetic trends, [Petersen & Mayne] ★929
of human cancer, 629
GENITALS: See also Vagina
brucellosis in workers in refrigerator meat plants, [Purriel] 1417—ab
changes from testosterone in eunuchoidism, [Kasanin & Biskind] ★1317
changes (puerperal) from diethylstilbestrol and methyl testosterone, [Rutherford] 73—ab
management of male pubescence, [Schonfeld] ★177
tuberculosis in women, [Auerbach] 464—ab
GENIUS: See Great Men
GENOTYPES, establishment; predetermining sex, 348—E
GEORGE WASHINGTON University, (course in ocular surgery) 270
GEORGIA Pediatric Society, (meeting) 59
University of: See University
Warm Springs Foundation: See Foundations
GERBER'S Junior Foods—Apple, Prune, Tapioca Pudding, 677
GERIATRICS: See Old Age
GERMANY, infant mortality and birth rate, 349—E
infectious diseases in, 200
public health under Hitler, 266; 352; 524; 602; 686; 768; 847; 953; 1164; 1227; 1292; 1360
War with: See World War
GERMICIDES: See Antiseptics; Disinfectants; Sterilization, Bacterial
GERONTOLOGY: See Old Age
GESTATION: See Pregnancy
GIARDIA in dogs and cats, 713
GIBBS (Willard) Medal: See Prizes
GIBSON (Thomas) memorial at Queen's University, 1298
von GIERKE'S Disease: See Glycogenosis
GIFTS: See Donations (cross reference)
GILLESPIE, J. O., Distinguished Service Medal to; now prisoner of war, 683
GIRLS: See under Adolescence
GIROLAMO Pagliano Syrup, 69—BI
GLAMO-FORM bust developer, 146—BI
GLANDERS in dogs and cats, 713
GLANDS: See under names of specific glands
Ductless: See Endocrine Glands
GLAN-TEX Tonic, Neff's, 783—BI
GLASS cartridges for anesthetic solutions, 472
dressings for wounds, [Giordano] 710—ab
GLASSES, Field: See Binoculars
goggles and, to prevent conjunctivitis from sunlight, (Council report), ★514
price regulation, 685
GLAUCOMA, hereditary, goniotomy for (Barkan operation), [Ackerman] 76—ab
treatment, prostigmine, [Kull] 467—ab
GLEASON, JAMES J., reported missing, 1355
GLEET Specific, 453—BI
GLIOTOXIN, anti-infective agent, [Smith] 851—ab
GLOBAL WAR: See World War II
GLOMERULI: See under Kidneys; Nephritis, glomerular
GLOMUS TUMORS, [Ley] 709—ab
GLOSSITIS: See Tongue inflammation
GLOVES: See Rubber gloves
GLUCOSE: See Dextrose
GLUTEAL REGION: See Buttocks
GLYCEMIA: See Blood sugar
GLYCERIN as syrup substitute, 196—E
GLYCEROL, sodium-beta-glycerol-phosphate effect on fracture healing, [Sperling] 76—ab
GLYCERYL TRINITRATE, exposure to fumes from hot nitroglycerin, 552
GLYCOGEN preventing liver damage and facilitating repair, [Ravdin & others] ★322
GLYCOGENOLYSIS faster than glycogenesis in liver, [Portis] ★733; (discussion) 737
GLYCOGENOSIS (von Gierke's disease) in child of 20 months, [Ortiz Ramos] 468—ab
GLYCOLS: See Propylene Glycol
GLYCOSURIA: See also Diabetes Mellitus
cholecystohepato-hyperglycemic syndrome, [Portis] ★734
GODDARD, HERBERT M., innovations as coroner, Philadelphia, 1222—E; 1376—OS
GOGGLES: See Glasses
GOITER: See also Goiter, Toxic; Hyperthyroidism
American Association for the Study of, (awards Van Meter Prize) 141; (cancels meeting) 776
Iodine distribution: Iodine prevention, [Curtis & Fertman] ★423
Kitrab, 69—BI
GOITER, TOXIC, chronic myopathy resembling muscular atrophy, [McEachern] 83—ab
diagnosis, lid retraction sign in diffuse type, [Eden] 84—ab
GOLD, black dermographism from, [Urbach & Pillsbury] ★485
Treatment: See Arthritis
GOLDWATER Fund for fellowship in hospital administration, 960
GONADOTROPINS active when given orally, 898
chorionic, in male gonadal failure, [Heller] 1176—ab
chorionic, in male pubescence, [Schonfeld] ★178
function of pituitary stimulated by ketogenic diet, [Julesz] 219—ab
serum vs. chorionic, effect on ovary, [Rydberg & Pedersen-Bjergaard] ★1117
GONADS: See also Ovary; Testis
hypogonadism, gonadotropins and testosterone for, [Heller] 1176—ab
hypogonadism, testosterone changes personality, [Kasanin & Biskind] ★1317
GONIOTOMY (Barkan operation) in glaucoma, [Ackerman] 76—ab
GONOCOCCUS culture facilities offered to physicians, N. J., 775
culture technic, [Strauss & Grunstein] ★1187
Infections: See Gonorrhea
GONORRHEA: See also Venereal Disease
Arthritis: See Arthritis, gonococcic
Conjunctivitis: See Conjunctivitis, gonococci
Gleet Specific, 453—BI
prevention, sulfathiazole orally, [Loveless & Benton] ★827
rate in armed forces, 762—E
rate in troops in 1918, [Greenwald] ★9
treatment, shock in fever therapy; blood plasma for, [Prince] ★935
treatment (single combined), sulfathiazole plus fever, [Ferguson] 786—ab
treatment, sulfadiazine efficacy; toxicity, [Finland] 622—ab
treatment, sulfathiazole, [Schnetz] 547—ab
treatment, sulfathiazole in prostitutes, [Strauss & Grunstein] ★1187
treatment, sulfonamides, evaluated, [Douglas] 787—ab
treatment, sulfonamide resistance in, [Petro] 1416—ab
treatment, vaginal heating with Elliott, short wave and diathermy machines, [Upton & Benson] ★38
vulvovaginitis, diethylstilbestrol for, [Abarbanel & others] ★1124; ★1125
GOODHUE "health bomb" to protect against insects, as in pup tent, 846
GOODWYN, EDMUND, (1788), cooling in shock, [Waters] 783—C
GOULD, MARVIN M., commended for services at Cocoanut Grove fire in Boston, 684
GOVERNMENT: See United States
Control of Medicine: See Medicine, state
Hospitals: See Hospitals
GRAAFIAN Follicle: See Follicle Stimulating Hormone
GRADUATE Courses, etc.: See Education, Medical
Fellowships: See Fellowships
GRADUATES: See also Interns; Residents
Foreign: See Physicians, foreign
number of, vs. number of internships available, 1914-1943, ★1022
GRAFT: See Bones; Skin
"Sleeve": See Nerves, repair
GRAHAM (Groover) Remedy; 453—BI
GRAHAM'S Pills, 453—BI
GRAIN: See Cereal Products; Corn; Flour
GRAMICIDIN, anti-infective agent, [Smith] 851—ab
effect on gas gangrene, [Sandusky] 459—ab
in vitro and in vito studies, [Robinson] 979—ab
local use in otolaryngology, [Bordley] 978—ab
GRAND MAL: See Epilepsy
GRANTS for Research: See American Medical Association; Fellowships; Foundations; Research; Scholarships
GRANULOCYTOPENIA: See Agranulocytosis, Acute
GRANULOMA, calcareous, [Inclan] ★490
inguinal, resin of podophyllum in olive oil for, [Tomskey] 79—ab
intraperitoneal, from talcum on surgeon's gloves, [Seelig] 1304—C
GRAPEFRUIT juice with orange juice, Domino and Sunseald Brands, 677
GRAVES' Disease: See Goiter, Toxic
GREAT BRITAIN: See British; England; Royal; World War
GREAT MEN, stomach disorders in, [Goldstein] 646—ab
GREECE, starving children in, 1104
GREEN discoloration between toes, 300
GRIP: See Influenza
Devil's: See Pleurodynia, epidemic
GROUP Health Association, Inc., Justice Roberts' opinion, 262—E; 267—OS: (payment of fine: A. M. A. Board of Trustees statement) 1228—OS
Hospitalization: See Hospitals, expense insurance
GROVER Graham: See Graham
GROWTH: See also Body height
as index of nutritional status, [Kruse] ★587
promoting factor in liver extract, [Jiménez Díaz] 468—ab
thiamine plus riboflavin to stimulate, 615
ultraviolet radiation effect on, (Council report) ★514
GUANIDINE and muscular dystrophy, [MacFate] 78—ab
GUARDIANSHIP: See Medicolegal Abstracts at end of letter M
GUATEMALA, sunshine areas, vitamin D for children in, 162
GUILE, H. V., organized first cardiac clinic at Bellevue in 1911 [Cohn] 70—C
GULLEN, AUGUSTA S., first woman graduate honored, Canada, 1256
GULLSTRAND Lens: See Prizes
GUM Arabic: See Acacia
chewing; pepsin, and stomach ulcer, 713
GUNS: See Bullet; Wounds, gunshot
GUT: See Catgut
GYMNASIUM: See Athletics
GYNECOLOGISTS, American Association of, (prize competition) 448
patient load of physicians, [Ciocco & Altman] ★509; ★510; ★512
GYNECOLOGY, American Board of, (examinations) 62; 693
anesthesia (local) in, [Greenhill] 375—ab
disorders, testosterone implantation in, [Greenblatt] ★17
lesions, etiologic role in hypertension, [Everett] 787—ab
recommendations for women in industry, (A. M. A. Section Committee report) [Hesseltine & others] ★800
treatment (adjunctive) with diethylstilbestrol, [Abarbanel] ★1123
GYNECOMASTIA: See Breast hypertrophy in male

H

HAIN Becompx Capsules 699—BI
HAIR: See also Beard; Scalp; Shaving
axiliary and pubic, in ovarian syndrome, [Albright] 786—ab
excessive (superfluous), ultraviolet rays blamed for, (Council report), ★127
gray, can hair turn white over night? 4
theories on graying, 161
gray, yellowing of, 713
growth by plan; effect of cutting, brushing, washing, oils, brilliantine, and wet comb method of hair dressing, 1116
Hairtone Co. and Marvel Co., 146—BI
Loss of: See Alopecia
Nu-Hair Products: Besgrow, 146—BI
Parisian Style Saje, 884—BI
safety hat for women to prevent hair being caught in machines, 534
Vaseline Hair Tonic, 69—BI
HAIRTONE Co., 146—BI
HALL'S Lotta Lox, 146—BI
HALOMIST, 280—BI

HALOWAX dermatitis in navy yard workers: cleansing mixture to prevent, [Morris & Tabershaw] *192; 471
HAMARTOMA in infant, surgical excision, [Benson] 1180—ab
HAND: See also Fingers; Nails
fractures (gunshot), treatment, [Gusynin] *952
immersion: peripheral vasoneuropathy after chilling, [Ungley] 218—ab
HANES signs in parkinsonism and in nephritis, [Hanes] *1152
HANDICAPPED: See also Crippled; Disability; Physical Defects
fitting to jobs: *Manpower Review* tabulation, 681—E
industrial placement, [Harvey & Luongo] *100; [Foster] 867—ab; [Bartle] *1002
rehabilitation, federal legislation on, (Bureau report) 1382—OS
rehabilitation service, Connecticut, [Biram] 863—ab
HAPPY Day Headache Powders, 280—BI
HAPTENS. A and B group specific substances? [Aubert] 1241—C
HARRISON NARCOTIC ACT: See also Medico-legal Abstracts at end of letter M
A. M. A. resolution on certified checks to pay tax, (Bureau report) 1376—OS
professional use of narcotics by medical officers, 136
HART'S Compound Asthma Medicine, 538—BI
HARTFORD Retreat-Shipley test in subdural hematoma, [Abbott & others] *664; *739
HARVEST Itch: See Trombidiosis
HARVEY Lecture: See Lectures
Society, Dr. Thorn addresses, 775
HASHISH (marihuana): See Cannabis
HAT, safety, for women war workers, 534
HATCHER, ROBERT A., tribute to, as Council member, 1368—OS
HAVANA, University of: See University
HAVLIK, ALOYSIUS J., awarded Silver Star, 683
HEAD: See also Brain; Cranium; Face; Hair; Scalp
Bald?: See Alopecia
injuries in military hospital, especially in Royal air force, [Symonds] 1311—ab
HEADACHE: See also Migraine
Happy Day Headache Powders, 280—BI
Speedo Headache Powders, 69—BI
symptom in subdural hematoma and effusion from blast injuries, [Abbott & others] *664
HEALING: See Fractures; Wounds
HEALTH: See also Disease; Hygiene
A. M. A.-N. E. A. joint committee on health problems in, appointment to, 1228—OS; 1374—OS
American Public Health Association (committee on public health coverage), 1155—E; (3-day conference) 1298; (committee on professional education) 1374—OS
Board of: See subhead: Department
Centers: See Health units
Child: See Children
codes for day nurseries, N. Y., 692
committee for Association of Commerce, 878
committee (new) of Community Service Society of New York, 609
department, functions in gas attack, 601
department name changed, N. H., 1234
Education, A. M. A. Bureau of: See American Medical Association
education, bureau of, Puerto Rico, 205
Education Conference, N. Y., 60
education, Kellogg Foundation fellowships at U. of North Carolina, 525; 597—E
education, new opportunities: A. M. A. Bureau refresher courses, etc., 597—E
education, radio for, O., 1297
education, radio information hour suspended, Cleveland, 204
education, Radio program by A. M. A.: See American Medical Association
Examination: See Physical Examination (cross reference)
foundation, Nuffield (40 million dollar), 777
in Wartime: See Medicine and the War; World War II
Industrial: See Industrial Health
institute, (annual, Philadelphia) 1102
Insurance: See Insurance
International Health Device Corp., 537—BI
Mental: See Mental Hygiene
Minister of, Medical Advisory Committee to advise, England, 142
National Health Council Committee for Study of Voluntary Health Agencies, 1374—OS
National Defense and: See Medicine and the War
of Recruits: See Medicine and the War
of the doctor (8,884, England), [Gosse] 625—ab
officers, Conference of State and Provincial Authorities, 961
public, conference (N. Mex.), 447
public, courses at Pennsylvania, 272
public, extended to cover the nation, 1155—E
public, Illinois Public Health Association, 1403
public, in Bolivia, 208
public, in Chile, (correction) 141
public, in Paraguay, 1300
public, Iowa Public Health Association, 1403
HEALTH—continued
public, North Carolina Academy of, organized, 610
public, report, Palestine, 779
public, under Hitler's rule, 266; 352; 524; 602; 686; 768; 847; 953; 1164; 1227; 1292; 1360
resorts, American, A.M.A. committee on, 1398—OS
School Health: See Schools
Service: See also Medical Service
service for German youth, principles, 1227
service for public schools, American Academy of Pediatrics standards, 619
Service in Factories: See Industrial Health service (free) demand decreasing, 349—E
state, administration in Illinois, A. P. H. A. study, 1155—E
state deputy officer needed, Delaware, 690
Statistics: See Vital Statistics
Students: See Students
sugar wartime restriction will improve, 1370—OS
Supplies: See Medical Supplies
U. S. Chamber of Commerce National Health Advisory Council, 693
U. S. Public Health Service (agreement with Procurement and Assignment Service; A. M. A. Committee report) 134; (classification of commissioned officers in as IV-B) 352; (Medical Society of District of Columbia cooperates with, in low cost care for federal women workers) 362; (analyze A. M. A. directories, 1923-1938) 445—OS; (Office of Tuberculosis Control established) [Parran] *520; (program for rapid treatment center for venereal disease) 847; (joint report on epidemic keratoconjunctivitis) *1153; (results of tuberculosis survey) 1298; (reorganization; promotions) 1380—OS
units (new district, Mich.), 532; 691
week, national Negro, 693
HEARING: See also Ear
aids (electrical), minimum requirements, (Council report), 591
aids, A.M.A. Council report, 1371—OS
aids: Maico, Ace Model, 48
aids, Western Electric Ortho-tronic Audiphone, 1283
conservation, county program, Md., 1354—E
conservation (industrial), ear stopper (plastic mold), [McCoy] *1330
conservation, program, Michigan, 363
impaired, jobs for workers with, [Harvey & Luongo] *100; 681—E; [Bartle] *1002
in older workers, [Carlson] *808
Loss of: See Deafness
HEART: See also Arteries, coronary; Cardiovascular System
American Heart Association (standardize electrocardiographic nomenclature), [Barnes & others] *1347
Arrhythmia: See Arrhythmia
Auricular Fibrillation: See Auricular Fibrillation
block (partial) due to digitalis, [Campbell] 545—ab
California Heart Association, 1403
Cardiologic Week (1st), 696
Chicago Heart Association annual meeting, 608
clinic, first for working adults formed at Bellevue in 1911, [Cohn] 70—C
clinic, Max Stern Heart Station, O., 692
Decompensation: See Heart insufficiency
Disease: See also Cardiovascular Disease; Endocarditis
disease and hepatic function, [Bernstein] 77—ab
disease and rheumatoid arthritis in necropsies, [Baggs] 1309—ab
disease, arteriosclerotic, or attack of biliary colic? 985
disease, blood pyruvic acid after exercise in, [Yanof] 1308—ab
disease, contrast roentgenography in various types, [Taylor & McGovern] *1270
disease, desiccated thyroid in; Lorand's statement, 898
disease, digitalis lanata for, [Aceves] 295—ab
disease, electrocardiographic diagnosis, [Almela Guillén] 982—ab
disease, exercise and fatigue in, 1093—E
Disease, Hypertensive: See Blood Pressure, high
disease, industrial employment in, [Harvey & Luongo] *105; *106; [Bartle] *1002
disease, liver function in, [Chávez & others] *1276
diseases, mortality rate, Rio de Janeiro, 1238
disease (organic) and electroconvulsive shock therapy, [Evans] 1307—ab
disease (rheumatic) in children, [Ditkowsky & others] *992
disease (rheumatic) in Mexico vs. U. S., [Chávez] 1282—ab
disease (rheumatic) in whites and Negroes, [Bruno] 463—ab
disease (rheumatic), statistical study; onset; duration, severity; prognosis, [Cohn & Lingg] *1; *113
disease, urea and antipyrine with quinidine intramuscularly, [Sturnick & others] *917
disorders (subclinical) in tonsillitis, [Herve] 548—ab
HEART—continued
electrocardiogram, diagnostic value, [Katz] 371—ab
electrocardiogram, digitalis effect on, [Sellmer] 294—ab
electrocardiogram, elevated ST segment, 471
electrocardiogram, fetal clinical, [Goodyear] 155—ab
electrocardiogram in heart wounds, [Presnakov] 710—ab
electrocardiogram in prognosis of hypertension, [Daley & others] *386
electrocardiography nomenclature standardized, American Heart Association committee report, [Barnes & others] *1347
Enlargement: See Heart hypertrophy
Failure: See Heart insufficiency
hypertrophy, dysphagia due to, decompress chest for, [Newton] 789—ab
hypertrophy in hypertension, [Daley & others] *386
Infarction: See Myocardium
Inflammation: See Pericarditis
Insufficiency, camphor for, consultants views on, (Council report) 431
Insufficiency, diagnosis of sudden collapse with severe precordial pain, 471
Insufficiency: failure, liver function in, [Chávez & others] *1276
Insufficiency, fatal paraldehyde administration, [Burstein] *187; (reply) [Miller] 785—C
Insufficiency, indigestion in later life, 741—ab
Insufficiency, peripheral shock: Lewis-Perry epinephrine test, [Urrutia] 547—ab
Involvement after nephrectomy, [Kretschmer] *176
Irritable: See Asthenia, neurocirculatory
ischemia, anastomoses with omentum for, [Kirillov] 710—ab
Muscle: See Myocardium
Neurosis: See Asthenia, neurocirculatory
New York Heart Association committee on cardiovascular diseases in industry, 1404
Output: See Blood circulation; Blood volume
Pain: See Angina Pectoris
phonoelectrocardioscope, Donovan's, 778
Rate: See also Pulse; Tachycardia
rate below 50 in athletes; 44 in 2 men, [Wilburne] 700—C
research fund (special) for young physicians, 1391—OS
reserve, exercise and fatigue in disease, 1093—E
response to cold water; submersion syndrome, [Tuttle] 705—ab
roentgenography (contrast) with diodrast, [Taylor & McGovern] *1270; (Council report) 1351
Rhythm: See Arrhythmia
rupture and hypertension, [Edmondson] 888—ab
tumor, celothelioma of atrioventricular node, [Mahaim] 294—ab
wounds, electrocardiogram in, [Presnyakov] 710—ab
HEAT: See also Burns; Cold; Fever; Fire; Steam; Temperature
canned, for emergency use, formula for making, 798
determining factor in embryo, [Petersen & Mayne] *929
effect on renal blood flow and glomerular filtration, [Byfield & others] *118
effect on shock, [Wakim & Gatch] *903
exhaustion (industrial), vitamin C plus salt to prevent, [Goodhart] 871—ab
exposure to fumes from hot nitroglycerin, 552
home pasteurization of milk, 898
moist, sterilizing qualities of free flowing steam equipment, 551
Production: See Metabolism, basal
therapeutic, local vaginal heating in pelvic inflammation, [Bigton & Benson] *38
therapeutic use of, warning vs. cooling in shock, 432—E; [Perry] 966—C
tissue changes from, vs. those from cold, 91
toxicity of heated human plasma, 596—E
HEATING: See also Temperature, room
steam radiators as possible carriers of infections, 985
HEIGHT: See Body height
HEKTOEN Lecture: See Lectures
HELIUM-oxygen hood, New York Academy report, *758
HELVETIUM-anglo, new element No. 85, Dr. Alice Leigh-Smith discovers, 695
HEMAGGLUTINATION: See Agglutination; Blood groups
HEMANGIOMA, cavernous, contact roentgen irradiation for, [Kerr] 153—ab
HEMATOMA, subdural: See Meninges hemorrhage
HEMLOCK poisoning in 4 children, [Montanes del Olmo] 468—ab
HEMOCONCENTRATION: See Blood concentration
HEMOGLOBIN and erythrocyte count, 472
levels of 831 infants and children, [Davidson] 376—ab
regeneration in donors, iron effect on, [Barer] 1309—ab
values and acclimatization to discontinuous anoxia, [Stickney] 76—ab

HEMOGLOBINURIA, hematogenous interstitial nephritis, [Mathews] 544—ab
HEMOGLOBINURIC FEVER, hematogenous interstitial nephritis, [Mathews] 544—ab
HEMOLYSINS, formed within regional lymph nodes, 594—E
HEMOLYSIS "Index" determined from urobilinogen in feces, [Miller] 215—ab
HEMOPHILIA, recurrent intracranial hemorrhages in, [Baer & others] *933
HEMOPHILUS ducreyi: See Chancroid
HEMOPTYSIS, immersion blast injuries, 679—E
metastatic abscess without rib fracture, 1419
HEMORRHAGE: See also Purpura; Telangiectasia; under names of diseases and organs affected
Menstrual Bleeding: See Menstruation
Prothrombin relation to: See Blood prothrombin
puberal, irradiate spleen and pituitary to control; offspring normal, [Kaplan] *1199
repeated, shock from, amino acids and hydrolyzed protein for, [Elman & Lischer] *498
shock, "lost plasma" theory in, 1354—E
Subarachnoid: See Meninges
Subdural: See Meninges, hemorrhage
Thrombopenic: See Purpura
HEMORRHOIDS, Aesculus Pile Cerate, 453—BI
Ellp, 69—BI
fitting handicapped workers to jobs, 681—E
internal, primary lymphoid tumors resembling, [Smith] *495
treatment, injection, obturator nerve paralysis after, 1315
Young's (Dr.) Piloment, 618—BI
HEMP, Indian (marihuana): See Cannabis
HEPARIN response: clotting mechanism test, [de Takats] 1246—ab
treatment of thrombophlebitis, phlebothrombosis and embolism, [Evans] 623—ab
HEPATITIS: See Liver inflammation
HEPATOMA induced by p-dimethylaminoazobenzene, 519—E
HEPATOSPLENOGRAPHY: See Liver abscess
HER-LAX Tonic, Dickson's, 783—BI
HEREDITY: See also Genetics; under names of specific diseases as Anaphylaxis and Allergy; Cancer; Glaucoma; Polyposis
predetermination of sex; establish genotypes, 348—E
recessive sex linked character: nystagmus, [Käser] 793—ab
HERNIA: See also Gastroschisis; Spine, intervertebral disk
fitting handicapped workers to jobs, 681—E
rehabilitating selectees with, Illinois, 439
HEROES: See World War II
HERPES: See also Dermatitis herpetiformis
simplex virus in spinal fluid in lymphocytic choriomeningitis, [Armstrong] 980—ab
HEXITE, industrial hazard, [McGee] 852—ab
HICCUP, postoperative and epidemic, [Rosenow] 705—ab
HIDRADENITIS suppurativa, low fat diet and thyroxin for, [Sutton & Marks] *1344
HIGH Blood Pressure: See Blood Pressure, high
Frequency Apparatus: See Diathermy
HILLMAN'S D Compound, 280—BI
HINKLE (Dr.) No. 3, Cascarin Compound Tablets, 453—BI
HIP: See Buttocks; Pelvis
HIRSCH medical scholarships, established, Buenos Aires, 450
HIRSUTISM: See Hair, excessive
HISPANIC-American Medical Society, (meeting), 960
HISTAMINE, reactions to; desensitization, [Browne] 289—ab
susceptible constitution, role in latent allergy, [Albus] 88—ab
test in leprosy, [Pardo-Castello & Tiant] *1267
treatment for pain from gunshot nerve wounds, [Rusetskiy] 710—ab
HISTIDINE and mucus secretion in peptic ulcer: Lenormand theory, 381
HISTOLOGY: See Tissues
HISTORY of Medicine: See Medicine
HITLER'S Rule: See Germany
HODGKIN'S DISEASE, diagnosis; treatment, [Dolley & Brewer] *1133
in children, Cordoba, 1300
treatment, radioactive substances, [Low-Beer] 706—ab
treatment, total body irradiation, [Medinger] 458—ab
HODSON, WILLIAM, (given leave of absence) 140; (death) 363; 447
HOGS: See also Trichinosis
milk borne brucellosis epidemic, [Borts & others] *319
swine lungworm reservoir and transmission of influenza virus, 433—E; 1287—E
HOLMES, OLIVER WENDELL, centennial of his paper on puerperal fever at New York Academy, 692; [Dailly] *1006; 1094—E
HOME: See also Housing
births at vs. in hospitals, 1092—E
Canning: See Canning
Children's: See Children, Institution for
HOMEMAKERS' program on WLS, broadcast by A.M.A. during, 357—OS
HOMICIDES: See Murder
HOMOSEXUALITY, psychologic basis, [Kasanin & Biskind] *1317; *1321
HONEY as syrup substitute, 196—E
El Panel Cuban, 699—BI
Tongue River Apiaries, 884—BI
HOOKER Scientific Library, Drs. Hoobler's gift, 139
HORMONES: See Endocrine Glands; Plant; etc.
Sex: See Androgens; Estrogens; Gonadotropins
HORSES, Encephalitis in: See Encephalitis, Epidemic
export from Sweden, 847
Gonadotropins from Pregnant Mare's Serum: See Gonadotropins, serum
odor, sensitivity to, [Hartmann] 88—ab
Serum: See Serum
HOSPITALIZATION Insurance: See Insurance, expense insurance
HOSPITALS: See also Clinics; Medicolegal Abstracts at end of letter M
administration, Goldwater fellowship, 960
aids (auxiliary), training, subcommittee decision: Health and Medical Committee, 525
aids, students serve as, to relieve shortage, Boston, 59
American College of Surgeons approve, *1010
American Hospital Association, (creates wartime service bureau) 611; (Mr. Puffer new executive secretary) 878; (report of Hospital Plan Comission) 1099—OS; (activities; to publish hospital magazine) 1103
A. M. A. Council on: See American Medical Association
Approved: See Hospitals, registered and approved
Army: See Medicine and the War; World War II
Ashford General, formerly Greenbrier Hotel, 599
Australia provides Yanks with, 1355
bed capacity, *1009; *1011
bed capacity under Hitler's rule, 266
Bellevue, (first cardiac clinic in 1911), [Cohn] 76—C; (their Nomenclature used by hospitals) *1026
Births in: See Hospitals, maternity
blood banks, number having, *1009
Borden General, 1290
building by U. S. government, 444—OS; 1381—OS
Bureau of Standards and Supplies (resolution on a commission to study) 1103; (*Bureau News*) 1171
Catholic Hospital Association conference, 1405
center, (new, Buenos Aires) 450
changing trends in, 1899 vs. 1942, 1099—OS
Children's: See also Hospitals, nursery
children's, statistics, *1016
children's, ultraviolet rays to reduce cross infections, [Robertson & others] *908
Corps Waves of U. S. Navy, 684; 1225
county, new, Md. 139
Cushman, for Indians, completed, Wash., 448
Darnall General, purchased by government; bed capacity; list of staff members, 522
deaths and necropsies compared with admissions, *1019
disease nomenclature used by, *1026
emergency cases only accepted, New York, 876
Emergency Hospital Service, for treating injuries, England, 613
employees, wage adjustments, National War Labor Board General Order No. 26, 533
Expense Insurance: See also Medical Service plans
expense insurance, A. M. A. Board of Trustees and hospital associations, 58—OS
expense insurance as insurance, 1305—MJ
expense insurance, Associated Hospital Service of New York, 140; 1099—OS
expense insurance, Associated Hospital Service of Philadelphia, (annual report) 610; (correction) 777
expense insurance, Blue Cross plan, 1099—OS; (survey reveals approval) 1171
expense insurance, complete service vs. surgical plan, (Bureau report) 1387—OS
expense insurance, committee to study, W. A., 1235
expense insurance plan of Social Security Agency, opposition to, 1171
eye, ear, nose and throat, statistics, *1015
facilities by states and by control (government; nongovernment), *1012; *1013; *1014
facilities not in the register, *1021
facilities: types of service, *1011
formulary, 8 rules for, [Smith] *1004
general, designated for special surgical treatment, 1095
German, proposed work for, 1292
Gorgas requests scientific material, 1405
Government: See also Hospitals, building; Hospitals, facilities
government, *1010
growth, summary, 1909 to 1942, *1021
Hammond General, 1291
Industrial: See Industrial Health
Infection (cross) in: See Infection, cross
Insurance: See Hospitals, expense insurance
HOSPITALS—Continued
Interns; Internships: See Interns; Internships
Isolation, *1016
Isolation, temporary, equipped with 1,000 beds to control influenza, Germany, 953
Kennedy General, Memphis, 1096
London, new uniform for nurses at, 64
management changes, N. Y., 960
Massachusetts General, (new publication: *News*) 775; (their Nomenclature used by hospitals) *1026
maternity, births in vs. at home, *1013; *1017; *1018; 1092—E
maternity (state owned) Oneida Hospital of the Mountains dedicated, 609
maternity, statistics, *1015
maternity ward named for Dr. Henry F. Beckman, 1296
Medical Record Librarians: See Medical Record Librarians
Medical Service Plans: See Hospitals, expense insurance; Medical Service plans
Memphis new, 61
Military: See Medicine and the War; World War II
Mobile Hospital Unit cited for distinguished service, 685
Mount Carmel Mercy victory day clinic, 363
Mount Sinai, cardiovascular diseases and gastroenterology courses, 1101
municipal, of London, medical education in, 63
Naval: See Medicine and the War
necropsy performance in, *1024; *1025
New Halfa Hadassah, Palestine, 1105
Newton Memorial opened, Texas, 140
Nichols General, Louisville, Ky., 1095
nongovernmental, *1011
Number, March 27, 1943, *1009
Nursery: See also Hospitals, children's
nursery, ultraviolet rays effects on air borne infection, [Sommer] 889—ab
Nurses: See Nurses
Nursing: See Nursing
orthopedic, statistics, *1016
patients, average cost per day, 1899 vs. 1942, 1099—OS
patients, average length of stay, *1010; (1899 vs. 1942) 1099—OS
patients must be vaccinated against smallpox, Philadelphia, 140
patients, number operated on, *1009; *1018
patients, total number admitted to, *1009
(% of population) *1009; *1018
Percy L. Jones General, dedicated at Battle Creek, 845
pharmacy, [Smith] *1003
Philadelphia General, pneumonia treatment at, [Filippin & others] *230
physicians, no. of patients seen per week, [Clocco & Altman] *509; [Frame] 1109—C
Presbyterian (Chicago) unit, 846; 1356
Psychiatric: See also Hospitals, state
psychiatric, assistant medical director and supt. needed, Calif. 690
psychiatric, characteristics of inmates in 1940, 1354—E
psychiatric, Jewish asylum closed down, Germany, 953
psychiatric, research by National Committee for Mental Hygiene, 777
psychiatric, statistics, *1015
registered and approved by A. M. A., 769—OS; *1021; (list of) *1027; 1398—OS
registered and approved, intern vacancies in, January 1943, *1022
Residencies: See Residencies
Residents: See Residents
rural, Commonwealth fund program, 680—E
Service: See also Hospitals, expense insurance; Hospitals, maternity service; Medical Service plans
service in U. S. praised by Chilean federation, 141
service in U. S.; 22nd annual presentation of data, *1009
service, inpatient care increase; free service decreasing, 349—E; 1099—OS
service surveys: Nuffield Provincial Hospitals Fund, 64
ships, 3 new, 1225
Staff: See also Hospitals, aids; Hospitals employees; Hospitals physicians; Interns; Nurses
staff, administrative personnel, *1019
staff, recruiting for army from, England, 142
State: See also Hospitals, psychiatric
state, acute sodium fluoride poisoning at, Ore., [Ldbeck & others] *826
state, amebic dysentery, N. Y., 1234
state, awards for research in, Va., 693
state, new central unit for typhoid carriers, Ill., 608
state typhoid epidemic, suits against Illinois officials dismissed, 362
syphilis tests in donors; notify those positive, [Frye & others] *182
training in dietetics, U. S. Civil Service exam., 205
trains, 522
Tuberculosis: See Tuberculosis
Units: See Medicine and the War, hospital unit
Utica, 100th anniversary, 447
Valley Forge General, officially opened, 1224

HOSPITALS—Continued
Walter Reed Hospital's convalescent center, 1290
William Wirt Winchester, taken over by Army, 600
HOTELS, Army takes over, (Miami Beach), 199; (Greenbrier, White Sulphur Springs, W. Va.) 599
HOUSING: See also Home
Federal Housing Authority Projects, 595—E
schemes and Royal College of Physicians, England, 962
HOUSMAN, N. S., paroled, 530
HOWARD, RUSSELL JOHN, death, 696
HOWE (Lucien) Prize: See Prizes
HUMIDITY: See Barometric Pressure
HUNGER: See Starvation
HUNTER, William and John, Stark and Baillie Incident, [Holman, Moorman] 966—C
HYDATID Disease: See Echinococcosis
HYDRATION: See also Dehydration
state, serum and plasma in shock, [Levinson] 1180—ab
HYDRAULIC abdominal concussion syndrome, [Lauster & Willard] ★995
HYDROA vacciniforme and ultraviolet radiation, (Council report) ★514
HYDROGEN ion concentration of vegetable juice cocktails, (Council report) ★258
ion concentration of urine, value in sulfadiazine therapy, [Fox & others] ★1147
HYDRONEPHROSIS, nephrectomy for, [Kretschmer] ★474
HYDROPHOBIA: See Rabies
HYDROPS fetalis: See Erythroblastosis
HYDROTACHYSTEROL: See Dihydrotachysterol
HYDROXYCOUMARIN: See Dicoumarin
HYGEIA: See American Medical Association
HYGIENE: See also Health; Sanitation
Industrial: See Industrial Hygiene
Mental: See Mental Hygiene
personal, taught children in East Prussia, 768
Social: See Social Hygiene
HYMES, A. L., missing in action, 1234
HYPERBILIRUBINEMIA: See Blood bilirubin
HYPEREMIA, passive induced, for chilblains, [Herxheimer] 792—ab
HYPERGLYCEMIA: See Blood sugar
HYPERHIDROSIS: See Sweat
HYPERINSULINISM: See Pancreas secretion
HYPERKINEMIA, supernormal circulation, [Starr] 1111—ab
HYPERPYREXIA: See Fever, therapeutic
HYPERSENSITIVITY: See Anaphylaxis and Allergy
HYPERTENSION: See Blood Pressure, high
HYPERTHYROIDISM: See also Goiter
exercise and fatigue in, 1093—E
induced, thiamine effect on, [Williams] 1412—ab
liver necrosis in, [Sealy] 704—ab
recurrent, roentgen therapy: no danger of skin burn, (reply) [Pomeroy] 714; [Weinberg] 798
treatment: calcium, phosphorus, vitamin D, [Puppel] 1175—ab
treatment, radioactive iodine, 54—E
treatment, roentgen, [Soley] 624—ab
HYPERTRICHOSIS: See Hair, excessive
HYPERTROPHY: See Splenomegaly; under specific organs as Breast; Heart; Prostate
HYPNOTICS: See Sedatives and Hypnotics
HYPNOTISM as therapeutic procedure, 299; (reply) [Erickson] 1250
HYPODERMIC Needles: See Needles
HYPODERMOCLYSIS: See Sulfadiazine; Sulfapyridine; Sulfathiazole
HYPOGLYCEMIA: See Blood sugar
HYPOGONADISM: See Gonads
HYPOIMMUNITY: See Immunity
HYPOPHYSIS: See Pituitary
HYPOPROTEINEMIA: See Blood proteins
HYPOTENSION: See Blood Pressure, low
HYPOTHALAMUS, tumor destroys, [Collins] 287—ab
HYPOTHERMIA: See Cold, therapeutic use
HYSTERIA, iatrogenic disorders, 879
War: See Neurosis, war

I

IATROGENIC disorders, 879
ICE, Dry: See Carbon Dioxide, solidified
ICE CREAM, rationing for industrial cafeterias, [Goodhart] 870—ab
ICHTHYOSIS, treatment, vitamin A, [Rapaport] 1310—ab
ICTERUS: See Jaundice
Gravis: See Liver atrophy (acute yellow)
IDENTIFICATION, of fungi and molds, 898
of persons in industrial plant catastrophes, [Mould] 860—ab
of retained placental tissue in uterus curettings, 382
of vehicles in blackout, OCD letter, 1226
photographic, for identifying human remains (skeleton) in murder trial, 207
IDIOCY, amaurotic, familial, [Globus] 290—ab; (lipid metabolism), [Davison] 290—ab
ILL (Edward J.) Award: See Prizes
ILLINOIS: See also Chicago
health administration in, A.P.H.A. study, 1155—E
ILLINOIS—Continued
Institute of Technology, (electron microscope installed), 446
Public Health Association, 1403
Society for Mental Hygiene, 1296
Soldiers' and Sailors' Children's School, rheumatic fever in, [Ditkowsky & others] ★991
University of: See University
ILLNESS: See Disease
ILLUSTRIOUS Men: See Great Men
IMMERSION; "Immersion Foot or Hand": See Water
IMMIGRANTS: See Foreigners; Physicians, foreign
IMMUNE serum: See Leptospirosis
IMMUNITY: See also Antibodies; under names of specific diseases
B_1 vitamin hypoimmunity, 1284—E
IMMUNIZATION: See also Vaccination; under names of specific diseases as Diphtheria; Scarlet Fever; Tetanus; Tuberculosis
for industrial workers, [Bristol] ★816
IMPETIGO contagiosa, microcrystalline sulfathiazole solution for, [Harris] ★403
wartime, [Carslaw] 83—ab
IMPLANTATION: See Androgens; Tantalum
IMPOSTORS, King (R. T.) impersonates Medical Corps officer, 1169
Phillips (Arthur O.) placed on probation, 59
IMPOTENCE, Red Hearts, 69—BI
treatment, gonadotropin and testosterone, [Heller] 1176—ab
treatment, testosterone, [Kasanin & Biskind] ★1317
IMPREGNATION, Prevention: See Birth Control
weather at time of, determining factor in newborn, [Petersen & Mayne] ★929
INCISION, Relaxing: See Skin graft
INCOME: See also Fees; Wages
diet in relation to, [Stiebeling] ★832; ★835; ★836
family, and medical service plans, (Bureau report) 1387—OS
Tax: See Tax
INDEPENDENT Contractors: See Medicolegal
Abstracts at end of letter M
INDEX Medicus: See American Medical Association, Quarterly Cumulative Index Medicus
INDIAN Hemp (marihuana): See Cannabis
INDIANA University course in otolaryngology, 1100
INDIANS, AMERICAN, largest hospital completed, Wash., 448
U. S. Office of Indian Affairs, (now in Chicago) 777; (Dr. H. DeLlen, assistant) 1236
INDIGESTION, Digesto-Pep, 618—BI
dyspepsia in Royal Navy, [Wade] 792—ab
gastroscopic study, [Christiansen] 982—ab
in later life, 741—ab
nervous, 1001—ab
INDUCTION BOARD: See Medicine and the War
INDUSTRIAL ACCIDENTS: See also Workmen's Compensation
cholostitis after, [Biehl] 158—ab
cranio-cerebral trauma: meningitis after, [Riley & Waugh] ★338
cut injuries with duraluminum, [Sedlacek] 86—ab; (correction) 220
Emergency Medical Service cooperation in plant catastrophes, [Mould] 860—ab
hair caught in machines, safety hat prevents, 534
rehabilitation immediately after, (in Canada) [Galbraith] 867—ab
treatment by Emergency Hospital Service, England, 612
INDUSTRIAL DERMATOSES, black dermographism from certain metals, [Urbach & Pillsbury] ★425
cable rash or Halowax acne in navy yards; cleansing agents prevents, [Morris & Tabershaw] ★192; 471
cutting oils in munitions factories; preventive: Steridol number 3, 223
eczema, spontaneous desensitization in, [Koch] 87—ab
resorcinol dyes causing, 985
INDUSTRIAL DISEASES: See also Industrial Dermatoses; Industrial Health
allergy and workmen's compensation, [Clarke] 855—ab
allergy in butcher and refrigerator, 896
anthrax, sulfonamide for, [Gold] 215—ab
arc welding, erythema from; use West Protective No. 88 ointment, 162
Asbestosis: See Pneumonoconiosis
bagassosis, lung disease, [Castleden] 293—ab
benzene or lead, vs. food and vitamins, [Cowgill] 868—ab
Compensation for: See Workmen's Compensation
cotton workers, acute illness in, [Schneiter] 497—ab
ear disability in, preventing with plastic ear stopper, [McCoy] ★1330
explosives (military) toxicity, [McGee] 852—ab
genital brucellosis in refrigerator meat plant workers, [Purriel] 1417—ab
heat exhaustion, vitamin C plus salt prevents, [Goodhart] 871—ab
hemoptysis and metastatic abscess without rib fracture, 1419
INDUSTRIAL DISEASES—Continued
lead absorption, relation to ascorbic acid, [Evans & others] ★501; [Cowgill] 868—ab
legislation, drafting, (round table discussion) 859—ab
manganese poisoning (chronic) [Kaufman] 548—ab
manganese poisoning, nervous system in, [Voss] 87—ab; (correction) 220
trinitrotoluene, exposure to hot nitroglycerin fumes, 552
Pneumonoconiosis: See Pneumonoconiosis
poisoning, examination to detect [Foulger] 849—ab
poisoning, ocular signs, [Bonsib] 850—ab
reportable, (Ky.), 1169; (A. M. A. Council committee) 1229—OS
Silicosis: See Pneumonoconiosis
sulfur dioxide hazard to refrigerator worker, 302
sulfur, wettable sulfur and lime sulfur, hazard from using for mites, 91
INDUSTRIAL HAZARD: See under Industrial Diseases
INDUSTRIAL HEALTH: See also Industrial Hygiene
Absenteeism: See subhead: Workers
A. M. A. Annual Congress on, (proceedings) 848—OS
A. M. A. Cooperative Committee on Nutrition in Industry, 1369—OS
A. M. A. Council on: See American Medical Association
cardiovascular diseases, New York Heart Association committee on, 1404
conference, Ill., 1403
district units, Michigan, 363
Health services: See subhead: Medical services
hospitals, statistics, ★1015
immunization for workers, [Bristol] ★816
keratoconjunctivitis (shipyard conjunctivitis) [Paul] 71—C; [Sanders & others] ★250; (Office of Surgeon General circular letter No. 14) 598; [Braley & Sanders] ★999; (A. M. A. Section-U. S. P. H. S. joint report) ★1153
lectures, Pittsburgh, 61
Lunches: See subhead: Nutrition
medical and surgical conference, program, Michigan, 876
medical dept. cooperative Emergency Medical Service in catastrophes, [Mould] 860—ab
medical dept.: 2 categories, [Manson] 863—ab
medical personnel, procurement and training, [Selby] 850—ab
medical profession and, 842—E
medical records, putting them to work, [Manson] 862—ab
Medical Service, A. M. A. Council lists essentials of, [Hesseltine & others] ★799; 1372—OS
medical service in factories, Germany, 1292
Medical Service in Industry series: program for a county medical society, 259; 1372—OS
medical service plans, A. M. A. Council discusses, 1230—OS; 1372—OS; 1373—OS
medical service plans for war workers, 1164
medical service (routine) shortcuts; technical assistants, [Holmblad] ★826
medical services, survey, Pa. 1404
medical societies, industrial health program: (county) 259; (state) 841—E; 1372—OS
medicine courses for students, 1372—OS
medical standards (minimum), Buffalo, 1101
medicine and surgery course, N. Y., 363
medicine, courses, Va., 364
medicine, graduate clinic, Wis., 1170
medicine, institutes, Va., 960
nurses, outline of procedure for, A. M. A. Council discusses, 1230—OS; 1373—OS
nutrition activity, [Cowgill] ★817
nutrition, A. M. A. Council's committee on, 1st meeting, 1230—OS
nutrition, communal feeding at Royal Ordnance Factory, [Gunson] 1248—ab
nutrition, effects of vitamin B deficiency and manual labor, [Johnson] 789—ab; [Foltz] 1411—ab
nutrition experience, criteria for evaluation, [Bing] ★813
nutrition, food habits, [Pett] 868—ab
nutrition for older worker, [Tuohy] ★42; [Carlson] ★806
nutrition, lunch, amount of time for, [Pett] 868—ab
nutrition, lunch, cold vs. hot; "victory plates," [Goodhart] 870—ab
nutrition, lunch during midshift rest period, [Bristol] 871—ab
nutrition, lunch (37-cent, 40-cent, 57-cent, etc.) for workers, [Goodhart] ★93
nutrition, lunch, what it should contain, 1224
nutrition (national program), [Goodhart] ★823
nutrition, plant facilities for feeding workers, [Cowgill] ★818
nutrition, soda pop, soft drinks, sweets; breakfast; between-meal lunches; vitamins, etc., [Wilder] 869—ab
nutrition; time worker on 3:30 to 12 shift eat his meals? [Cowgill] 868—ab
nutrition, workers should drink more milk; chocolate milks desirable? [Bristol] 871—ab; (Canada's experience) [Pett] 871—ab
physical examination outline, (Council report) 1229—OS; 1372—OS

INDUSTRIAL HEALTH—Continued
physical examination, preemployment also periodic, [Manson] 862—ab
physical examination, processing technics, [Wishard] *810; (discussion) 863—ab
physical examination technic to find those to withstand hazards, [Foulger] 849—ab
physicians and industrial mobilization, [Taft] 848—ab
physicians and surgeons, Western Association convention, 1103
physicians (civilian) employed by Army for war plants, 437
physicians respond to placement, Tex., 1102
physicians supply for war plants, OWI release, 1160
physicians, training program (Mich.), 531; 1101
prehabilitation for trainees, Rochester, [Sawyer] 853—ab
programs, state, 256; 841—E; (Ohio) 364; (Mo.) 1101
prospects and progress, 840—E
Rehabilitation Council, A. M. A. Council discusses organizing, 1230—OS
rehabilitation, future of, [Foster] 867—ab
rehabilitation, physical and occupational therapy in, [Coulter] 866—ab
rehabilitation; psychiatric problems; use of gymnasium, [Solomon] 865—ab
rehabilitation service plus workmen's compensation: Conn., [Biram] 863—ab
respiratory infections (colds, influenza, pneumonia), control, [Keefer] *802
Service: See Industrial Health, medical service
shipyards (contract), health-safety program, [Drinker] *822; (discussion) 862—ab; 1164
shipyards, California Physicians' Service and Henry Kaiser's Permanente Foundation, 595—E
syphilis, serologic tests of employees, Nebr., 609
tuberculosis case finding (photofluorographic) [Parran] *520; (results) 1298
tuberculosis: x-ray survey among union workers, Pa., 272
Wartime Aspect: See Medicine and the War, industrial
work for patient with tubercle bacilli in sputum, 986
work load of private practitioner (number of patients seen per week), [Ciocco & Altman] *506; [Frame] 1109—C
work, optimum hours and productivity, [Townsend] 853—ab
Workers: See also Workmen's Compensation; and other subheads as Physical Examination: Rehabilitation
workers, absenteeism, and physician, [Taft] 848—ab
workers, absenteeism, Industrial Hygiene Foundation studies, 449
workers, absenteeism less among semidisabled, [Biram] 864—ab
workers, absenteeism prevention, [Lund] 850—ab
workers, absenteeism, rate; causes, [Manson] 862—ab
workers at hospitals, wage adjustment, 533
workers, Chicago Conference on Health of, 159
workers, children of, care for, (England) 64; (Mayor's committee, N. Y.) 138; 447; 877; 1101; (Civilian Defense to train women) 352; [Hesseltine & others] *802
Workers, Food for: See Industrial Health, nutrition
workers, handicapped, employing; placing; [Harvey & Luongo] *100; (*Manpower Review* tabulation) 681—E; (rehabilitation; workmen's compensation) [Foster] 867—ab; [Bartle] *1002
workers, health of, Illinois, 1100
workers, immunization program, [Leake] 852—ab
workers (intellectual) and physical exercise for soldier-students, 516—E; [Oberteuffer] 1409—C
workers, management cooperation, [Lund] 849—ab
workers, midshift rest periods with access to food, [Bristol] 871—ab
workers; older worker, those past 50 or 60, [Tuohy] *12; [Carlson] *806
workers trainees, physical defects; prehabilitation program, Rochester, N. Y., [Sawyer] 854—ab
workers (women federal), Medical Society of District of Columbia cooperates with U. S. P. H. S. in low cost care, 362
workers (women), jobs suitable for, [Harvey & Luongo] *106; (A. M. A. Section Committee report) [Hesseltine & others] *799
workers (women), O.P.A. wants clothes standardized, 1171
workers (women war), health of, England, 880
INDUSTRIAL HYGIENE: See also Industrial Health
advisory committee (special) on, Illinois, 202
bureau, W. Va., 1235
county programs on, Pa., 140
for women (A. M. A. Section Committee report), [Hesseltine & others] *799
INDUSTRIAL HYGIENE—Continued
Foundation, (report) 449; (new medical director: Dr. Kutscher) 1103
laboratory, army, (at Johns Hopkins) 446; (Dr. Hussey director) 531
lectures, Pittsburgh, 61
National Conference of Governmental Industrial Hygienists, meeting, 878
Navy officers study, to protect workers, 1170
protective ointment for welders, (correction) 365
service director, Dr. Leggo, 1102
INDUSTRIAL INJURIES: See Industrial Accidents
INDUSTRIAL POISONING: See Industrial Dermatoses; Industrial Diseases
INDUSTRIAL TRADE UNIONS, CIO and A.F. of L. health and safety clauses [Lund] 849—ab; [Drinker] *822; 862—ab
INERTIA, Pernicious: See Fatigue
INFANTILE PARALYSIS: See Poliomyelitis
INFANTILISM, ovarian syndrome, [Albright] 786—ab
INFANTS: See also Children; Infants, Newborn; Pediatrics; under names of specific diseases as Pericarditis; Pneumonia
accidents fatal to in wartime; smothered by heavy blankets, burns, etc., 263—E
amphetamine sulfate and ferrous sulfate poisoning fatal in 1 year old, [Hertzog & others] *256
Cholera in: See Cholera
Feeding: See also Infants, Newborn, feeding
feeding, breast and galactagogues, 629
feeding, evaporated milk assured, 764—E
feeding, Gerber's Junior Foods—Apple, Prune, Tapioca Pudding, 677
feeding, Mrs. Paley's Baby Foods Brand—Strained Beef Liver, 677
feeding, procedure for breast feeding of twins and triplets, 1116
feeding, Staphylococcus aureus from mother's milk, [Duncan] 1181—ab
food rationing card for, Swiss, 1237
infections (serum in; sulfonamides for, [Hartmann] 890—ab
mortality, (Colombia) 696; (increase, Calif.) 1234
mortality trend and birth rate, 349—E
obesity or Fröhlich syndrome in, hormonal therapy, 898
oxygen tent therapy, New York Academy report, *756
Pan American members of Instituto Internacional de Protección a la Infancia, 208
premature, first week of life, [Kohan Y.] 626—ab
premature, remove sacral parasitic fetus from boy, [Gray] 460—ab
premature, symposium on, N. Y., 1297
premature, tunica vasculosa lentis in, [Terry] 1178—ab
sleep disturbances of, 630
sulfonamide therapy, [del Carril] 468—ab
testis (undescended) treatment not advised, 472
women over 30 urged to have more babies, 364
INFANTS, NEWBORN: See also Fetus
blood in, Rh agglutinogen, [Fisk] 541—ab
Death of: See Stillbirth
erythroblastosis or congenital syphilis, [Henderson] 218—ab
feeding during early hours of life, 302
gastroschisis, [Watkins] 1415—ab
icterus gravis, choline chloride plus fat diet in, [Danis] 544—ab
diarrhea (infectious) made reportable, N. J., 775
intestinal outbreak in, N. J., 60
normal after maternal irradiation, [Kaplan] *1199
Nursery: See Hospitals, nursery
placental transmission of antibodies against whooping cough, [Cohen & Scadron] *656
respiratory function of digestive tract, [Dillon] 457—ab
respiratory patterns at birth, Barcroft's study, 1354—E
resuscitation by tracheal intubation, [Torpin] 147—C
weight varies with season of conception, [Petersen & Mayne] *929
INFARCTION: See Adrenals; Lungs; Myocardium
INFECTION: See also Bacteria; Immunity; Pneumococcus; Staphylococcus; Streptococcus
air borne, control to prevent spread of influenza virus, [Keefer] *805
air borne, ultraviolet lamps in schools to prevent, 382
carriers: steam radiators, 985
cross, in infants ward, ultraviolet rays to control, [Sommer] 889—ab
cross (respiratory), ultraviolet radiation to reduce in children's hospital, [Robertson & others] *908
Focal: See also Tonsils, infected
focal origin: ocular inflammations [Anastassoff] 793—ab
in diabetics, insulin resistance due to, [Greene & Keohen] *173
INFECTION—Continued
peripheral shock: Lewis-Perry epinephrine test, [Urrutia] 547—ab
pyocyaneus, of cornea, sulfadiazine ion transfer in [von Sallmann] 284—ab
resistance, and nutritional deficiency, [Wilson] 1411—ab
severe, in infants and children; sulfonamides for, [Hartmann] 890—ab
treatment, x-ray, [Bisgard] 891—ab; 1243—ab
Wound: See Wounds
INFECTIOUS DISEASE: See also Epidemics; Immunity; Immunization; Vaccination; under names of specific infectious diseases in Germany, 260
INFERIORITY Complex, testosterone treatment, [Kasanin & Biskind] *1317
INFERTILITY: See Sterility
INFLAMMATION: See under names of specific diseases and organs as Gallbladder; Intestines; Pancreatitis; Pelvis; Stomach
INFLUENZA A virus, 1353—E
A virus, irradiation, propylene glycol evaporation and air borne infection, [Henle] 890—ab
control, [Keefer] *804
diagnosis, malaria simulating, [Brill & Pellicano] *1130
eosinophilic pulmonary infiltration, [von Meyenburg] 626—ab
epidemic, federal legislation on, Bureau report, 1381—OS
epidemic in military camps in Victoria, [Burnet] 708—ab
epidemic, isolation hospital for, Germany, 953
epidemics: role of A, B and Y viruses, antibodies and immunity, 433—E
Immunization for industrial workers, [Bristol] *816
virus, swine lungworm as reservoir for, 433—E; 1287—E
INFUSION: See Injections
INGHAM, S. D., Bulletin of Los Angeles Neurological Society dedicated to, 774
INHALATION: See also Anesthesia; under names of specific substances
E & J Resuscitator, Inhalator, 1219
of Dust: See Pneumonoconiosis
therapy, administration standards, New York Academy report, *755
INJECTION: See also under names of specific substances
Hypodermic: See Needles, hypodermic; under names of substances as Sulfadiazine; Sulfapyridine; Sulfathiazole
Intramuscular, sciatic nerve injury, [Woodson] *1343
Intramuscular, tumors after, [Conrad & others] *237
Intravenous: See Blood transfusion; under names of specific substance
Treatment: See Hemorrhoids
INJURIES: See Accidents; Brain; Extremities; Trauma; etc.
Blast: See Bombs
Industrial: See Industrial Accidents
War: See World War II
INOCULATION: See Immunization
INSANE Asylum: See Hospitals, psychiatric; Hospitals, state
INSANITY: See also Dementia Precox; Hospitals, psychiatric; Mental Disorders; etc.
Medicolegal Abstracts at end of letter M
puerperal, progesterone treatment, [Schmidt] *190
treatment, prefrontal leukotomy, [McGregor] 466—ab
INSECTICIDES, accidents from, New York to safeguard against, 60
for mites in citrus groves, hazard of sulfur, 91
Goodhue "bomb"; fumigate pup tent with fine mist, 846
rotenone, use now rigidly restricted, 525
INSECTS: See also Bedbugs; Fleas; Flies; Lice; Mosquitoes
bird's food: stomach contents analysis, 573—ab
blood sucking bugs (Reduviidae) role in Chagas' disease, 65
INSEMINATION: See Impregnation
INSTITUTE: See also American Institute; National Institute
for Advanced Training of Medical Practitioners, Leningrad, [Kercheev] *766
for Psychoanalysis at U. Illinois, 59; 270
Graduate: See Education, Medical, graduate
of Medical Research dedicated, Toledo, 1235
of Medicine of Chicago, (Kretschmer Memorial Lecture by Dr. Opie) 446; (Capps Prize to Dr. Martin) 690; (Capps Prize competition open) 1169
on Exceptional Child (9th), 610
on industrial medicine, (Okla.) 692; (Va.) 960
INSTITUTION, children's, rheumatic fever in, [Pitkowsky & others] *991
hospital departments of, *1016
inmates in 1940, characteristics of, 1354—E
INSTRUMENTS: See also Apparatus; Medical Supplies; Needles
foreign body finder: the locator, [Moorhead] *123; (Navy given funds to buy) 1359

INSTRUMENTS—continued
Medical and Surgical Relief Committee requests, 1225
Moore introducer for spinal anesthesia, [Hand] ★33; [Moore] 35—ab
phonoelectrocardioscope, G. E. Donovan invents, 778
Russian War Relief, Inc., in dire need of, 1359
Sterilization of: See Sterilization, Bacterial
INSULIN dosage (maximum); 52—E; (reply: 5,780 units without shock) [Lozinski] 538—C
dosage, 1,820 units for coma, [Bailey] ★255
Hyperinsulinism: See Pancreas secretion
intranasal administration, 382
purity of, federal legislation, 444—OS
resistance, 52—E
resistance due to infection in diabetes, [Greene & Keohen] ★173
shock in diabetic during anesthesia, [Papper] 286—ab
shock treatment, neurologic aspects, [Pinto Pupo] 467—ab
Treatment: See also Diabetes Mellitus
treatment of cholecystohepato-hyperglycemic-glycosuric syndrome, [Portis] ★734
zinc insulin crystals and crystalline zinc insulin injection, (Council report) 592; (N. N. R. description) 592; 593
zinc protamine modified 3:1, [MacBryde] 1243—ab
INSURANCE: See also Workmen's Compensation
A. M. A. Council relationships, 1373—OS
health (cash), state laws on, (Bureau report) 1379—OS
health (compulsory), movement toward, Canada, 880; 1236
Hospitalization: See Hospitals, expense insurance
Life: See Metropolitan Life Insurance Co.
Medical Society Medical Service Plan: See Medical Service plans
question of, for factory workers, firemen, etc., in catastrophe, [Mould] 860—ab
social, Beveridge's report, 130—E; 142; 1299; 1406
war damage, A. M. A. to cover headquarters with, 58—OS
INTELLECTUAL workers and physical exercise for soldier-students, 516—E; [Oberteuffer] 1409—C
INTELLIGENCE and scabies, [Mellanby] 708—ab
Impaired from subdural hematoma and effusion, [Abbott & others] ★739
INTER-AMERICAN: See also Pan American
relation of A. M. A. Council on Medical Education, 1397—OS
Congress of Surgery (first) 66; 450
Division of New York Academy, reorganize International Society of Surgery, 62
INTERNAL DISEASES, blood vessels fragility in, [Schaefer] 158—ab
INTERNAL MEDICINE, American Board of, (reduces fee), 141
course, (circuit course, Okla.) 61; (by Dr. McCombs) 204; (American College of Physicians), 1101
patient load of physicians in, [Ciocco & Altman] ★509; ★510; ★512
INTERNAL SECRETIONS, Glands of: See Endocrine Glands
INTERNATIONAL: See also list of Societies at end of letter S
College of Surgeons (4th assembly) 1405
Conference of Biological Cycles (first), 776
Health Device Corporation and David B. Cropp, 537—BI
Laboratories, obesity cure, 369—BI
Society of Surgery reorganized, 62
Vitamin Corporation, Hain Becompx Capsules, 699—BI
INTERNE: See Journals
INTERNS: See also Internships; Residents; Medicolegal Abstracts at end of letter M
examination by civil service, Calif., 774
in air force hospitals; policy to be followed, 1223
increased production, ★1023
osteopaths as, in Army hospitals; federal legislation, 444—OS
Procurement and Assignment Service relation to, [Diehl] ★637; 678—E; ★1025; (recommendation on restricting use of) 1288
shortage, ★1022; 1397—OS
INTERNSHIPS: See also Residencies
coordination with accelerated medical program, 56
Hospitals Approved for: See Hospitals registered and approved
length of, ★1023; (reducing) 1376—OS
number vs. number of graduates and hospitals 1914-1943, ★1022
overlapping, utilize personnel resulting, 1097
types of, ★1024
INTER-STATE Postgraduate Medical Association, 1405
INTERTRIGO, treatment, ultraviolet rays (Council report), ★128
INTERVERTEBRAL Disk: See Spine
INTESTINES: See also Appendix; Colon; Duodenum; Feces; Gastrointestinal Tract; Jejunum; Rectum; etc.
INTESTINES—continued
absorption vs. urinary calcium, magnesium, phosphorus, [McCance] 1113—ab
air in, roentgen life test in stillborn (?), [Dilton] 457—ab
antiseptic sulfaguanidine, [Vieta] 703—ab
Autointoxication: See Toxemia, intestinal
Disease: See Appendicitis; Colitis; Diarrhea; Dysentery; Typhoid
Distention: See Flatulence
Hernia: See Hernia
infection outbreak in infants, N. J., 60
inflammation, sulfonamide for enterocolitis in infants, [del Carril] 458—ab
injury from underwater blast, [Auster & Willard] ★995; 1220—E
motility, obstructed biliary outflow effect on, [Mann] ★722
motility of: normal pattern, dyskinesia and effect of drugs, [Atkinson & others] ★646
parasites: chilomastix, 301
parasites infection and eosinophilia, 796
parasites infections in children from feeding zoo animals, (reply) [Ratcliffe] 898
perforation of tuberculous ulcers, [Lamberti] 293—ab
INTOXICATION: See Alcoholism
INTRAVENOUS Injections: See Injections, intravenous (cross reference)
INTRODUCER, Moore, for spinal anesthesia, [Hand] ★33; [Moore] 35—ab
INULIN clearance and glomerular filtration, [Byfield & others] ★118
INVALID: See Patients
IODINE, aqueous, action on Staphylococcus and Escherichia, [Hyndman & others] ★350
oil (poppyseed) effect on spinal cord and meninges, [Craig] 288—ab
Salt: See Salt
ION TRANSFER, sulfadiazine in pyocyaneus infection of cornea, [von Sallmann] 284—ab
IONTOPHORESIS: See Ion Transfer
IOWA Public Health Association, 1403
IRIDOCYCLITIS, focal origin, [Anastassoff] 703—ab
IRISH moss as syrup substitute, 196—E
IRITIS, tuberculous, [Brown] 288—ab
IRON, deficiency anemia in wartime, [Davidson] 376—ab
diet for pregnant and lactating women, [Ebbs] ★341
effect on hemoglobin regeneration in donors, [Barer] 1309—ab
ferrous sulfate poisoning fatal in 1 year old, [Hertzog & others] ★256
treatment of achlorhydric hypochromic microcytic anemia in child of 8, [Dacie] 545—ab
treatment with and without years of hypochromic anemia, [Moore & others] ★245
vitamin B_1 combination: Enrich, 884—BI
IRRADIATION: See Radiation; Roentgen therapy; Ultraviolet Rays
IRVING, FRANCES R., statement on continuous caudal analgesia, 260—E
ISCHEMIA: See Heart; Kidneys
ISIDORE Rosen: See Rosen
ISOPROPYL alcohol for rubbing purposes, 630
ITCH: See Scabies
Harvest: See Trombidiosis
ITCHING: See Eczema; Pruritus
IVES, JAMES E., death, 530

J

JACKET, life, to protect in blast injuries, 1220—E
JAPANESE at War: See World War II
JAUNDICE, biliary colic or coronary occlusion? 985
false, [Yepes Cadavid] 708—ab
Icterus Gravis: See Liver atrophy
infective hepatitis in war, 879
obstructive or hemolytic, mild hyperbilirubinemia in, [Johnson & Bockus] ★729; (discussion) 737
occurring 1 to 4 months after transfusing blood or plasma? [Beeson] ★1332
JEFFERSON Medical College, Hatfield bequest, 1405
JEFFRIES (John) Award: See Prizes
JEJUNUM, ulcers after partial or subtotal-gastrectomy, [Nissen] 147—C
JERICHO Boil: See Leishmaniasis
JEWELRY, black dermographism, [Urbach & Pillsbury] ★485; [Peck] 489—ab
JEWS: See Palestine
JOHNS HOPKINS (Industrial Hygiene Laboratory) 446; 531; (ships named after famous physicians from) 1358
JOHNSON, VICTOR E., new secretary of A. M. A. Council on Medical Education and Hospitals, 1399—OS
JOINTS: See also Arthritis; under names of specific joints as Elbow; Knee
painful, new disease entity? [Bowdoin] 889—ab
JOURNALS: See also Library; Newspapers
A. M. A. special journals: See American Medical Association
American Hospital Association hospital magazine, 1103
Anales de la Cátedra de Clinica Ginecológica, 1103
Archives published by A. M. A.: See American Medical Association
Archives of Biochemistry, 776
Bulletin of Genesee County Medical Society dedicated to Dr. Handy, 139
Bulletin of Los Angeles Neurological Society dedicated to Dr. Ingham, 774
Bumed news letter, 1225; 1363—OS
Bureau News of Hospital Bureau of Standards and Supplies, 1171
Clinical Journal, 50 years jubilee, 778
Current Mortality Analysis issued monthly by Bureau of Census, 948—E
Endocrinology, new editorial board, 533
Gastroenterology, 1158—E
Hygeia: See American Medical Association
Interne continues publication, 1236
J. A. M. A.: See American Medical Association
Journal of Aviation Medicine, to be published 6 times a year, 1171
Journal of National Malaria Society, 349—E
Journal of Oral Surgery, 611
Lending Service: See American Medical Association
Manpower Review tabulation of jobs for handicapped, 681—E
medical, and medical progress, 132—E
Minnesota Medicine 25th year, 532
News, of Massachusetts General Hospital, 775
Pediatria de las Americas, 1103
Psychosomatic Medicine, 517—E
Review of Gastroenterology dedicated to Dr. Eberhard, 272
Revista Argentina de Historia de la Medicina, 1103
Revista Peruana de Pedlatria, 205
Rocky Mountain Medical Journal, (Harvey Sethman enters service), 530
scientific, for enemy prisoners of war: "S. P. P.," 534
Service Bulletin of St. Joseph County Medical Society, 202
Squibb's Medical Journal Abstracts, 262—E
translations of articles, Anglo-Soviet Medical Council provides, 275
V-Mail Letter for medical officers in service, 262—E; (*Bumed*) 1225; 1363—OS
War Medicine, (for British Institutions, Macy Foundation gift) 265; (report) 1366—OS
Weekly News, U. S. Navy's, 684
JUDD Lecture: See Lectures
JUMPING: See Parachute
JUNGEBLUT-SANDERS "inhibin"; poliomyelitis inhibition, 194—E
JURISPRUDENCE, MEDICAL: See Medical Jurisprudence
J-W-D Blood Purifier, 369—BI

K

KAISER, HENRY, Permanente Foundation, 595—E
KALA-AZAR: See also Leishmaniasis
splenomegaly due to? 91
KAOLIN-Alumina Gel Treatment: See Peptic Ulcer
KAPLAN, I. I., egg white (avidin) in treatment of cancer, 92
KELLEY, HOWARD A., death; portrait, 277
KELLOGG Foundation: See Foundations
KELOIDS, [Garb] 703—ab
KEMPS (Dr. S.) and Consultorio Medico Standard, 537—BI
KENNER, A. W., war hero mentioned on A. M. A. radio program, 199
KENNY Technic: See Poliomyelitis
KERATITIS, interstitial, mapharsen for, [Astrachan & Cornell] ★748
KERATOCONJUNCTIVITIS, Epidemic, (shipyard conjunctivitis) A. M. A. Section on Ophthalmology Committee and U. S. P. H. S. joint report, ★1153
cataract (incipient) or? 1116
outbreak in New York, relation to virus, [Sanders & others] ★250
report outbreaks to Dr. Murray Sanders, [Paul] 71—C
reportable, (N. Y.) 271; (Mich.) 532; 959
symposium on, 136
treatment: circular letter no. 14 of Office of Surgeon General, 598
treatment, convalescent serum, [Braley & Sanders] ★999
virus from, 1353—E
KERATOSIS may change to basal cell epithelomas, (Council report) ★513
KETOGENIC Diet: See Diet
KIDNEYS: See also Ureters; Urinary System
biopsies in hypertension, [Castleman & Smithwick] ★1256; 1286—E

KIDNEYS—Continued
Black Tablets for, 618—BI
blood flow, outside temperature affects, [Byfield & others] ★118
calculi, colic from or diaphragmatic pleurisy? 629
Calculi from Sulfonamides: See Urinary System
calculi, nephrectomy for, [Kretschmer] ★474
complications, obstruction after sulfadiazine, value of urine Ph, sodium bicarbonate, [Fox & others] ★1147
complications, sulfadiazine; alkalis prevent, [Flippin & others] ★233
complications, sulfonamide, fatal, N. Y., [Sutliff & others] ★307
Disease: See also Hydronephrosis
disease, edema in, treatment, [Lehnhoff & Binger] ★1321
disease, industrial placement and, [Bartle] ★1002
disease, transfusion in, [Chukanova] 1114—ab
excision in aneurysm of renal artery, [Lowsley & Cannon] ★1137
excision, life after, [Kretschmer] ★473
extract in hypertension, [Jablons] 389—ab; [Schales] 977—ab
function in essential hypertension, [Dalton] 623—ab
glomeruli filtration, outside temperature affects, [Byfield & others] ★118
impairment due to crushing limbs, [Eggleton] 83—ab
Inflammation: See Nephritis
involvement in hypertension, [Daley & others] ★387
Irritation (severe) from protein (typhoid) therapy, [Taylor & Page] ★754
Sclerosis: See Nephrosclerosis
Surgery: See Kidneys, excision
tuberculosis, duration, [Suter] 1114—ab
tuberculosis, nephrectomy in, [Kretschmer] ★473
tumors, nephrectomy for, [Kretschmer] ★475
viability after ureteral obstruction, 301
KING, JAMES, & Sons, Army-Navy E to, 1292
KING, JOHN C., 90th birthday, 490
KING, REGINALD T., arrested for impersonating a physician, 1169
KINGS County Medical Society, committee on psychosomatic medicine, N. Y., 960
KISSING Bug: See Assassin Bugs
KITRAB, 69—BI
KITS for submarine chasers, 767
KLORSEPTIC Oil: Ointment, 699—BI
KNEE, injuries, from skiing, [Moritz] ★98
trauma, role in patella cubiti, [Habbe] 74—ab
KNEIFL, M. R., analyst for Lend-Lease Administration, 525
KNOX Gelatine, 884—BI
KOCH trial opened, Michigan, 691
KRAUSE-Setterlind Method: See Cadmium
KRETSCHMER Lecture: See Lectures
KUREX Diabetic Tonic, 699—BI
KYPHOSCOLIOSIS: See Spine curvature

L

LABEL, differentiate types of bile salts on, [Yegge] 720—ab
should read: "Ether U. S. P. Not for Anesthesia," 948—E
LABOR: See also Abortion; Cesarean Section; Hospitals; Obstetrics; Pregnancy; Puerperium
Anesthesia in: See under Anesthesia
diethylstilbestrol use in, [Abarbanel & others] ★1127
postpartum care: use of shock blocks, laxatives, ergot, 223
Premature: See Infants, premature
Psychosis after: See Insanity puerperal
LABOR, MANUAL: See Work
LABOR UNION: See Industrial Trade Union
LABORATORIES: See also under specific names as Baxter; International Laboratories; Lederle; Phipps Institute; etc.
A. M. A. Chemical Laboratory: See American Medical Association
data, blind belief in; diagnosis by medical student, S—ab
facilities (Mich.), U. S. Army leases, 1159
fee schedule, W. Va., 272
Industrial: See Industrial Hygiene
infections, typhus transmitted by bite or feces of lice, [Löffler] 467—ab
state, closed at Galesburg, Ill., 446
technicians, number in hospitals, 1942, ★1020
technicians, schools for, approved by A. M. A., 770—OS; ★1088; 1398—OS
LABYRINTH: See Ear internal
LACK, ARTHUR R., intravascular agglutinations in avian malaria, 263—E; (replies) [Nash] 885—C; [Kinsley] 885—C
LACTATION: See also Infants, feeding; Milk, human
amenorrhea, microscopic study of endometrium, [Topkins] 1414—ab
breast nursing and galactagogues, 629
diet in, nutritive requirements, [Ebbs] ★339
galactorrhoea: also inhibiting and suppressing with diethylstilbestrol, [Abarbanel & others] ★1124; ★1126; ★1127
LACTATION—Continued
women who work and, (A. M. A. Section Committee report) [Hesseltine & others] ★801
LACTOFLAVIN: See Riboflavin
LACTOSE tablet to sterilize drinking water, [Violle] 1182—ab
LAHEY Clinic trains specialists for Army and Navy, 266
LAKE County (Ind.) Medical Society honors 4 citizens with Oberlin Award, 132—E
LAMBERT CO., (Dr. Charles A. Cook heads medical dept.) 203
LAMBLIA: See Giardia
LAME: See Crippled; Poliomyelitis
LAMPS: See Ultraviolet Rays
LANE, Sir WILLIAM ARBUTHNOT, death, 273; 1299
LANGLEY PORTER Clinic dedicated, 690
LANGUAGE: See Terminology
LANHAM ACT, treatment centers for venereal disease, 444—OS; 777
LARVA, fruit fly, coconut water as culture medium, [Picado T.] 295—ab
migrans or creeping eruption in U. S., incidence, 552
LARYNGOLOGY: See Otolaryngology
LARYNX: See also Voice
obstruction (nondiphtheritic infections), tracheotomy for, [Neffson] 624—ab
LATIN AMERICAN: See also Inter-American; Pan American
Academy of Neurology, Psychiatry and Legal Medicine congress (1st) 1103
American Academy of Pediatrics opens membership, 62
Congress of Plastic Surgery (2nd) 450
LAWS AND LEGISLATION, allergy: report useful to legislators, [Clarke] 855—ab
American Law Institute Model Code of Evidence, 1377—OS
A. M. A. Bureau of Legal Medicine: See American Medical Association
federal and state, (weekly summary) 201; 357—440; 526; 603; 687; 770; 872; 954; 1098; 1166; 1232; 1294; 1401
Federal Food, Drug and Cosmetic Act: See Federal
federal, passed by 77th Congress, 444—OS; (also 78th Congress) 1379—OS
Harrison Narcotic Act: See Harrison Narcotic Act
industrial disease legislation, problems in drafting, (round table discussion), 859—ab
Medical Practice Acts: See Medical Practice Acts
premarital blood test law amended, Conn., 1295
state, review, (Bureau report) 1378—OS
Violation of: See Medical Jurisprudence; Medicolegal Abstracts at end of letter M
Workmen's Compensation Acts: See Workmen's Compensation
LAXATIVES: See Cathartics
LAXRID, Lawrence Mack's, 699—BI
LEAD absorption, ascorbic acid relation to, [Evans & others] ★501
azide, industrial hazard, [McGee] 852—ab
black dermographism and, [Urbach & Pillsbury] ★485
poisoning from bullet in sphenoid sinus, submucous resection to remove, [Futch] ★580
poisoning relation to food and vitamins, [Cowgill] 868—ab
LECITHOVITELLIN reaction in gas gangrene, [Weed] 153—ab
LECTURES: See also under Book Notices at end of letter B
Alpha Omega Alpha, 203; 959; 960
Beaumont, marks dedication of room, 691
Begg Society (1st), 775
Bernard (Nathalie Gray) (1st), 877
Biggs Memorial, 447
Billings (Frank), 1296
Bricker, 533
Bunts (Frank E.), 877
Chadwick, 1298
Cochran (Jerome), 1100
Contin, 295
Cutter, 1297
Dock (George), 1296
Dunham, 691
Fenger (Christian), 270
Graduate: See Education, Medical, graduate
Harvey, (4th) 203; (5th) 532; (6th) 877; (7th) 1170
Hektoen (Ludvig), 690
Hunterian: immersion blast injuries, 679—E
Judd (E. Starr) (10th), 532
Kretschmer Memorial, 446
Lee Memorial, in chemistry, 608
Lippitt Memorial, 776
McArthur (Lewis Linn), 959
McGuire (Stuart), 1235
Mann, 875
Marshall, 876
Mayo Foundation, 876
medical, popular, at Stanford, 959
Miller (C. Jeff), 1101
Morris (Malcolm) memorial, 206
Morris (Roger S.), 272
public, Massachusetts, 202
Shmookler (H. B.) Memorial, 1404
Smith-Reed-Russell Society, 608
Stieglitz Memorial, 875
LECTURES—Continued
Terry (Robert James) (1st), 203
Tufts Alumni, 446
Varrier-Jones, 143; 206
Welch (William Henry), 140
LEDERLE Laboratories, Inc., (new motion picture on sulfonamide therapy), 364
LEE Lecture: See Lectures
LEG: See Legs
LEGAL MEDICINE: See Laws and Legislation; Medical Jurisprudence; Medicolegal Abstracts at end of letter M
LEGISLATION: See Laws and Legislation
LEGS: See also Ankle; Foot; Knee; Tibia; Toes
Amputation of: See Amputation
Milk Leg: See Phlegmasia alba dolens
progressive aching in lead intoxication, [Futch] ★580
splint for, using plywood, [Parcher] 217—ab
ulcers (recurrent) and neurologic disorders, 1216
LEIGH-SMITH, Alice, discovers new element, anglo-helvetium, 695
LEININGER, ALFRED T., awarded Order of Purple Heart, 1096
LEISHMANIASIS: See also Kala-Azar
vaccination against Jericho boil (aleppo boil), Palestine, 614; 779
LEND-LEASE aid for French North Africa, 686
LENORMAND theory: histidine and mucus secretion in peptic ulcer, 381
LENS, CRYSTALLINE, opacity of: See Cataract
tunica vasculosa in premature infants, [Terry] 1178—ab
LENTIGO: See Freckles
LEPPER, J. H., optometrist, alleged color blindness cure, 948—E
LEPROMIN test (Mitsuda), [Pardo-Castello & Tiant] ★1267
LEPROSY, crusade against, Argentina, 208 (1st meeting of leprologists) 1405
pathologic, clinical, immunologic bacteriologic aspects, [Pardo-Castello & Tiant] ★1264
health of children of persons afflicted with, 366
transmission by fleas, [Munoz Rivas] 378—ab
LEPTOSPIROSIS, immune serum for, [Larson] 980—ab
in dogs and cats, 713
LEUKEMIA, acute, in adults, [Montoro] 296—ab
blood from, transfuse in agranulocytosis, [Rybakov] 710—ab
lymphatic (chronic), egg white and avidin for, [Rhoads & Abels] ★1261
lymphatic or myelogenous, total body irradiation for, [Medinger] 458—ab
treatment, radioactive substances, 54—E; [Low-Beer] 706—ab
LEUKOCYTES: See also Eosinophilia
Count: See also Agranulocytosis, Acute; Leukemia
count, leukopenia after sulfaguanidine and sulfasuxidine; liver extract prevents, [Spicer] 155—ab
count, leukopenia and leukocytosis after sulfapyridine, sulfathiazole, sulfadiazine, [Dowling & Lepper] ★1190
LEUKOCYTOSIS: See Leukocytes count
LEUKODERMA, treatment, ultraviolet rays (Council report), ★129
LEUKOPENIA: See Leukocytes count
LEUKOPHLEGMASIA: See Phlegmasia alba dolens
LEWIS-PERRY Test: See Capillaries
LEYDIGISM, new syndrome, [Klinefelter] 152—ab; (correction) 548
LIBEL suits filed against A. M. A., 1395—OS
LIBERTY, personal, high degrees, among doctors, 244—ab
LIBIDO, testosterone pellet implantation effect on, [Greenblatt] ★20; (discussion) 24—ab; [Kasanin & Bliskind] ★1317
LIBRARIANS: See under Library; Medical Record Librarians
LIBRARY: See Books; Journals
A. M. A.: See American Medical Association
Cleveland Medical, exhibit on Vesalius, 1297
Hooker Scientific, Drs. Hoobler's gift for, 139
Howard-Tilton Memorial, at Tulane, Dr. Walther donates rare collection, 959
librarians, number in all hospitals, 1942, ★1020
Wilinsky (C. F.) fund, 202
LICE, bite or feces of, typhus transmitted by, [Löffler] 467—ab
LICENSURE: See also Medical Practice Acts
Annual Congress on, 263—E; (program) 269—OS; 678—E
Buonanno (H.) permanently rejected for, W. Va., 776
examinations every 8 months, Ind., 608
examinations (special) for license, Miss., 1101
of alien physicians, test case ruling affects, Illinois, 690
of alien physicians, urge speedy naturalization, 365
of dislocated physicians, 135; 136; (Bureau report) 1375—OS
reciprocity, examination of applicants for, suspended, Ind., 362

LICENSURE—Continued
relocation of physicians 1161; (In U. S. vs. England) ; 1162
revocation of license of Dr. McPheeters, court nullifies, Calif., 1234
temporary licenses to practice, (Del.) 1100; (Lake County Society opposes, Fla.) 1234; (Bureau report) 1375—OS
LICHEN planus, ultraviolet rays for, (Council report) ★128
planus, thrombocyte deficit test, [Maynard & Hollinger] ★1195
LIDS: See Eyelids
LIFE: See also Death
after nephrectomy, [Kretschmer] ★173
American Life Convention meeting postponed, 611
Duration: See Old Age
expectancy in hypertension, [Daley & others] ★383
expectancy in rheumatic heart disease, [Cohn & Lingg] ★1
extension; food availability; employment of the aged, [Tuohy] ★42
jacket protection in blast injuries, 1220—E
test (roentgen); respiratory function of digestive tract, [Dillon] 457—ab
LIFTING weight not over 35 pounds by women, (A. M. A. Section Committee report) [Hesseltine & others] ★799
winged scapula from, [Hauser & Martin] ★667
LIGATURE: See Suture
LIGHT: See also Sunlight
Adaptation to: See Eyes accommodation sensitivity to, (Council report) ★514; ★515
LILJENCRANTZ (Eric) Memorial Collection at Stanford, 774
LILLY, ELI, medal awarded, 531; 1236
LIME, Chlorinated: See Chlorinated Lime
LINZENMEIER Test: See Blood sedimentation
LIP: See Lips
LIPASE Test: See Pancreatitis
LIPIDS metabolism and central nervous system, [Davison] 290—ab
LIPOMA also liposarcoma, mediastinal, [Dolley & Brewer] ★1132
LIPPINCOTT (J. B.) Co., L. W. Rowland death, 272
LIPPITT Lecture: See Lectures
LIPS, cheilosis, vitamin B complex deficiency; iron plus yeast for, [Moore & others] ★245
LIQUOR: See Alcohol
LISA (James R.) Award: See Prizes
LISTER Institute of Preventive Medicine, (Dr. Drury new director) 533
LITERATURE: See Books; Journals; Library; Newspapers; Terminology
LITHIASIS: See Calculi (cross reference)
LIVER: See also Bile Ducts; Biliary Tract
abscess, thorotrast hepatosplenography as diagnostic aid in, [Meredith] 80—ab
atrophy (acute yellow), choline chloride plus fat diet in newborn, [Danis] 544—ab
cancer, cirrhosis and enlargement, bromsulphalein vs. cephalin-cholesterol test for; [Mateer & others] ★726
cell stimulation, type of bile salts used for; [Yegge] 720—ab
cholecystohepato-hyperglycemic-glycosuric syndrome, [Portis] ★734
cirrhosis, plasma transfusion in, [Jiménez-Díaz] 86—ab
cirrhosis (portal), ascitic fluid intravenously after paracentesis; diet high in vitamins, proteins and carbohydrates, [Greene] ★715; [Saphir] 1304—C
cirrhosis, protective value of foods [Bollman] 1413—ab
cirrhosis, soybean, amino acids, choline, plasma infusion in, [Yater] 720—ab
damage, prevention; diet (high carbohydrate-low fat plus calf's liver or casein), [Ravdin & others] ★322
deaths, concept of, [Heyd] ★736
disease, causes of drop of plasma vitamin A level, [Popper] 141—ab
disease, "spiders" and other signs in, vs. estrogens, [Bean] 1412—ab
Dysfunction: See also Jaundice; Liver function tests
dysfunction, diagnosis; clinical prevention, [Portis] ★733; (discussion) 737
dysfunction, mild hyperbilirubinemia in, [Johnson & Bockus] ★729; (discussion) 737
extract, growth promoting factor, [Jiménez Díaz] 468—ab
extract prevents leukopenia after sulfaguanidine, etc., [Spicer] 153—ab
extract, skin changes in sprue syndrome, [Kaufman & Smith] ★168
fluke in dogs and cats, 713
function during sulfonamide therapy, [Kapnick] 790—ab
function tests after mapharsen, [Astrachan & Cornell] ★749
function tests (bromsulphalein) in heart disease, [Bernstein] 77—ab; [Chávez & others] ★1276
function tests (bromsulphalein) in low grade chronic illness, [Stiles] 374—ab
function tests (5 types) in heart disease, [Chávez & others] ★1276
LIVER—Continued
function tests (newer): cephalin-cholesterol flocculation, intravenous hippuric acid, improved bromsulphalein, [Mateer & others] ★723; (discussion) 737
gastrointestinal tract and, [Mann] ★720; (discussion) 737
inflammation, epidemic, [Evans] 156—ab
inflammation, infective hepatitis in war, 879
necrosis in hyperthyroidism, [Sealy] 704—ab
paratyphoid A infection (refractory), 1315
plasma protein storage, [Beattie] 377—ab
protein reserve in, 518—E
rupture, massive, [Pilcher] 704—ab
schistosomiasis involving, [Koppisch] ★936
solution, N. N. R., (Wyeth) 593
strained, Mrs. Paley's Baby Foods, 677
tumor, hamartoma in infant, excision, [Benson] 1180—ab
LIVING: See Life
Conditions: See Housing
LOANS: See Students; Students, Medical
LOBECTOMY: See Lungs
LOBOTOMY, Prefrontal: See Brain surgery
LOCAO Belem, 783—BI
LOCATOR: foreign body finder, [Moorhead] ★123; (U. S. Navy given funds to buy) 1359
LOCKJAW: See Tetanus
LOEFFLER'S Syndrome, [von Meyenburg] 626—ab; [Kartagener] 893—ab
LOMBARD'S test to detect deafness in malingerer, [Pitman] ★752
LONDON fogs, 186—ab
University of: See University
LONG ISLAND College of Medicine (graduate courses), 1170
LONGEVITY: See Life expectancy; Old Age
LOS ANGELES Neurological Society *Bulletin* dedicated to Dr. Ingham, 774
Psychiatric Service established, 959
LOTION: See Skin lotion
LOUSE: See Lice
LOW Pressure: See Pressure
LOYOLA University, (hospital unit on active duty) 600
LULL, George F., report, Annual Congress on Medical Education and Licensure, 678—E
LUMBAGO: See Backache
LUNCH: See Food; Schools
LUNDY, JOHN S., statement on continuous caudal analgesia, 260—E
LUNGS: See also Pleura; Respiratory System
abscess, secondary to aseptic hemorrhagic infarction, [Chester] 891—ab
bagassosis (industrial), [Castleden] 293—ab
cancer, [Johnson] 154—ab; [Dolley & Brewer] ★1134
changes (unusual) in acute respiratory infection, [Duggan] 1414—ab
Collapse: See Pneumothorax, Artificial (cross reference)
complications after thigh amputations, high ligation of femoral vein prevents [Veal] ★240
complications of diphtheria in adults, [Claveaux] 85—ab
Disease: See also Pneumonoconiosis
disease (chronic intrapulmonary), angiocardiography in, [Taylor & McGovern] ★1270
disease in infants, sulfonamide for [del Carril] 468—ab
edema, after lobectomy and transfusion, [Gibbon] 78—ab; 465—ab
Embolism of Pulmonary Artery: See Embolism
Hemorrhage: See Hemoptysis
in whooping cough, [Parra] 468—ab
Infection: See Bronchopneumonia; Influenza; Pneumonia; Tuberculosis, Pulmonary
infiltration (eosinophilic) [von Meyenburg] 626—ab; [Kartagener] 893—ab
Surgery: See Lungs, edema
Tuberculosis of: See Tuberculosis, Pulmonary
tumors, (primary), [Dolley & Brewer] ★1130; (superior sulcus) ★1133; ★1136
LUNGWORM, swine, influenza reservoir and transmission of virus, 433—E; 1287—E
LUPUS erythematosus; miliaris disseminatus, ultraviolet rays for, (Council report) ★129
Vulgaris: See Tuberculosis luposa
LURIA, S. E., research on poliomyelitis inhibition, 194—E
LYMPHATIC SYSTEM: See also Lymphatism; Lympho—
antibody function of nodes, 594—E
mediastinal nodes in undulant fever, [Martin] 905—ab
silicosis of intrathoracic nodes, [Hagen] 87—ab; (correction) 220
LYMPHATISM, aortic size status lymphaticus and accidental death, [Millar] 293—ab
LYMPHOCYTES: See Choriomeningitis
LYMPHOGRANULOMA, VENEREAL, anorectal localization, surgery for, [Borjas] 547—ab
in 615 prostitutes with gonorrhea, [Strauss & Grunstein] ★1189
LYMPHOGRANULOMATOSIS: See Hodgkins Disease
LYMPHOMAS, benign rectal, resembling hemorrhoids, [Smith] ★495
LYMPHOSARCOMA, mediastinal, [Dolley & Brewer] ★1133
rectal, [Smith] ★495
LYMPHOSARCOMA—Continued
treatment, radioactive phosphorus, [Kenney] 706—ab
treatment, total body irradiation, [Medinger] 458—ab

M

McARTHUR Lecture: See Lectures
McCLOSKEY, JAMES A., first regular army medical officer killed in World War II, 437
McCORMICK, ALEXANDER S., retires, 28
years as secretary, 272
MacCRACKEN, W. B., II, awared Navy Cross, 684
McDOWELL, EPHRAIM, first ovariotomy performed by, Jane Todd Crawford Day, 202
McGUIRE Lecture: See Lectures
McINTOSH Sinustat, (Council report) 591
MACK'S (Lawrence) Laxrid, 699—BI
MacNALTY, ARTHUR, Morris memorial lecture by, 206
McPHEETERS G. C. H., court nullifies revocation of license, Calif., 1234
MACY Foundation: See Foundations
MADILL, GRANT C., death; portrait, 1239
MAGAZINES: See Journals
MAGNESIUM in Urine: See Urine
MAICO Hearing Aid, Ace Model, 48
MALARIA, avian, intravascular agglutinations in, 263—E; (replies: work done by Dr. Knisely et al at Tennessee, not Chicago), [Nash] 885—C; [Knisely] 885—C
chronic, splenomegaly due to? 91
control reconnaissance and combat units, 1290
instruction in malariology, 1297
Journal of National Malaria Society, official organ of National Malaria Society, 349—E
mortality in U. S., [Nichols] 544—ab; (southern section) [Faust] 788—ab
National Quinine Board: pool of, 434—E; 842—E; 845
National Research Council consultant group on, 439
treatment, Ascoli, 91
treatment, atabrine, mental symptoms after, also Circular Letter 22 on using plasmochin, atabrine quinine, 765—E; (correction) 878
treatment, cinchona bark, further conservation, 439
treatment, totaquine dosage, 138
MALE: See Castration; Eunuchoidism; Manpower; Men; Spermatozoa
Characteristics in Women: See Virilism
Hormone: See Androgens
Impotence: See Impotence
MALFORMATIONS: See Abnormalities
MALIGNANCIES: See Cancer; Sarcoma
MALINGERING, device to detect deafness, [Pitman] ★752
MALNUTRITION: See Nutrition
MALPRACTICE: See Medicolegal Abstracts at end of letter M
MALTA FEVER: See Brucellosis
MALUF Pasha, AMIN FARID, death, 1236
MAMMARY Gland: See Breast
MANGANESE, poisoning, chronic, [Kaufman] 548—ab
poisoning, nervous system in, [Voss] 87—ab; (correction) 220
MANGE in days and cats, 713
MANN Lecture: See Lectures
MANPOWER: See also War Manpower Commission
conservation, Georgia, 1169
Reviews: See Journals
MANSON'S Schistosomiasis: See Schistosomiasis
MAPHARSEN toxicity, [Astrachan & Cornell] ★748
Treatment: See Syphilis
MARES Serum: See Gonadotrophins, serum
MARGARINE: See Oleomargarine
MARIHUANA: See Cannabis
MARKLE Foundation: See Foundations
MARMOLA; dangerous to health; court decision; testimony of physicians at trial, 1286—E
MARRIAGE: See also Birth Control; Coitus (cross reference); Families; Maternity; Pregnancy
partners, sterilization, [Reimann-Hunziker] 893—ab
premarital examination laws, (Conn. amended) 1296; (Bureau report) 1378—OS
MARROW: See Bone Marrow
MARTIN, LILLIEN JANE, death, 1296
MARTLAND Lecture: See Lectures
MARVEL Co., 146—BI
MARYLAND, University of: See University
Washington County program for prevention of deafness, 1354—E
MASCULINIZATION: See Virilism
MASK, gas, care; distribution, 438
gas (rubber), contact dermatitis from [Lewe] ★422
oxygen, New York Academy report, ★757
MASSAGE, treatment of frostbite, [Bigelow] 460—ab
MASTECTOMY: See Breast Cancer
MASTOID, neurinoma of facial nerve in [Roberts] 1310—ab
MASTOIDECTOMY wounds (simple), sulfadiazine in, [Tucker] 1112—ab
MATE (Ambrew Mate) Institute, 146—BI

MATERNITY: See also Families; Pregnancy
clinic, Duke U. withdraws aid from, N. C., 140
health, (new director: Dr. J. Askew) 876
Hospital: Services; Wards: See Hospitals, maternity
mortality, births in hospitals vs. at home, 1092—E
mortality decrease from 1843 (Holmes' essay) to date, [Daily] ★1006; 1094—E
state care, 607—OS
women over 30 urged to have more babies, 264
MATTRESS, allergen-proof encasings, 345
MAYER Award: See Prizes
MAYNARD Thrombocyte Deficit Test: See Blood Vessels, disease
MAYO Clinic provides training for military officers, 600
Foundation: See Foundations
MAZZEI, E. S., honored, 208
MEALS: See under Food; Restaurant
MEASLES, convalescent serum, (Council report) ★19
MEAT: See also Trichinosis
allergy in butcher, 896
consumption per capita in U. S. 1909-1939, [Stiebeling] ★834; ★836
rabbits for food; not for pregnancy test, [Weisman & Coates] 1109—C
refrigerator plant workers, genital brucellosis in, [Purrel] 1417—ab
MECHOLYL CHLORIDE, reaction to: blood pressure (250/140); convulsions, paralysis, etc., [Spitz] 302
MEDALS: See Prizes
MEDIASTINUM leslons, differentiate from aneurysm with angiocardiography, [Taylor & McGovern] ★1270
tumors (primary) including sarcoma, [Dolley & Brewer] ★1131; ★1133; ★1134
MEDICAL ADMINISTRATIVE Corps: See Medicine and the War
MEDICAL ADVISORY Committee to advise minister of health, England, 142
MEDICAL ATTENDANTS: See Medicine and the War
MEDICAL AND SURGICAL RELIEF COMMITTEE, 439
dental equipment for coast guard stations, 138
emergency medical supplies requested, 1227
instruments wanted, 1225
ships kits for submarine chasers, 767
surgical instruments from scrap metal heap, 138
MEDICAL ASSOCIATION: See American; Association; Societies, Medical; list of societies at end of letter S
MEDICAL AWARDS: See Prizes
MEDICAL BOOKS: See Books; Library; Book Notices at end of letter B
MEDICAL CARE: See Medical Service
MEDICAL COLLEGE: See also Schools, Medical; University
of State of South Carolina Founders Day exercises, 61
of Virginia and West Virginia University (cooperative medical education program approved) 877
MEDICAL CORPS: See Army; Medicine and the War; Navy; World War II
MEDICAL CORRECTIONAL Association; persons interested in medical aspects of crime write to, 141
MEDICAL DIRECTORY: See American Medical Directory
MEDICAL ECONOMICS: See Economics, Medical (cross reference)
MEDICAL EDUCATION: See Education, Medical
MEDICAL EQUIPMENT: See Medical Supplies
MEDICAL EXAMINATION: See Physical Examination (cross reference)
MEDICAL EXAMINER: See Coroner
MEDICAL FEES: See Fees
MEDICAL HISTORY: See Medicine, history
MEDICAL INSPECTORS: See Medicine and the War
MEDICAL INSTITUTE: See Institute
MEDICAL JOURNALS: See Journals
MEDICAL JURISPRUDENCE: See also Laws and Legislation; Medicolegal Abstracts at end of letter M
Buonanno (Horacio) permanently rejected for licensure, W. Va., 776
control of medical testimony: Minnesota Plan, [Hammes] 857—ab
courses in, (Bureau report) 1376—OS
court nullifies revocation of license of Dr. McPheeters, 1234
court trial and decision on Marmola, 1286—E
criminal trials, electroencephalogram in, 64
identify human remains by photographic method in murder trial, 207
Indictment of A. M. A.: See American Medical Association, U. S. Department of Justice
interstate shipment of abortifacient paste enjoined, Minn., 775
Latin American Academy of (first congress), 1103
lecture series on legal medicine by coroner (Dr. Goddard), Philadelphia, 61; 1222—E; 1376—OS
MEDICAL JURISPRUDENCE—Continued
MEDICOLEGAL CASES: 1936-1940, 197—E; 1375—OS
roentgenographic life test of stillborn? [Dillon] 457—ab
suits against Illinois officials dismissed in state hospital typhoid epidemic, 362
Supreme Court opinion on guilt of A. M. A., 262—E; 267—OS
Supreme Court refuses to assume jurisdiction on birth control law, D. C., 530
Supreme Court refuses to reconsider abortion syndicate case, 1100
Supreme Court upholds medical school expulsions, Tenn., 204
Supreme Court upholds sentence of physician accused of abortion, 446
test case ruling affects allen licensure applicants, Illinois, 690
MEDICAL LEGISLATION: See Laws and Legislation
MEDICAL LIBRARY: See Library
MEDICAL LICENSURE: See Licensure
MEDICAL MEETINGS: See Societies, Medical
MEDICAL OFFICERS: See Army; Medicine and the War; Navy; World War II
MEDICAL PERIODICALS: See Journals
MEDICAL PILOTS: See Aviation; Medicine and the War
MEDICAL PLANNING: See Medical Services, planning
MEDICAL PRACTICE: See Physicians, practicing
MEDICAL PRACTICE ACTS: See also Licensure; Medicolegal Abstracts at end of letter M
chiropractor loses basic science certificate on abortion charge, Minn., 609
state amendments, (Bureau report), 1378—OS
MEDICAL PREPAREDNESS: See Medicine and the War
MEDICAL PRIZES: See Prizes
MEDICAL PROFESSION: See Medicine, profession of; Physicians; Surgeons
MEDICAL RECORD: librarians, (acceptable school for, essentials), 770—OS; ★1088; 1398—OS; (number in hospitals) ★1020
putting records to work, [Manson] 862—ab
MEDICAL RESEARCH: See also Research
Council treatment for war wounds, [Hawking] 466—ab
MEDICAL RESERVE CORPS: See Medicine and the War
MEDICAL SCHOOLS: See Schools, Medical
MEDICAL SCIENCE: See Medicine; Research; Science
MEDICAL SERVICE: See also Health; Hospitals service; Insurance, health
committee to study, W. Va., 1235
Emergency: See Emergency
for public schools, American Academy of Pediatrics standards, 619
for schools under Hitler's rule, 525
for wives and children of enlisted men, 1231—OS; 1379—OS
free, demand for, decreasing, 349—E; 1099—E
in Industry: See Industrial Health
National Conference on (17th), 448
night, Indianapolis Medical Society arranges, 691
planning postwar, A. M. A. committee on, 1228—OS
planning postwar, A. M. A. interest in, 130—E; 136; 764—E; 769—OS; 1094—E
planning postwar and war, National Conference on, 764—E; 769—OS; 1094—E; 1228—OS
planning postwar, Beveridge report, England, 130—E; 142; 1299; 1406
patient load of private practitioners [Ciocco & Altman] ★506; [Frame] 1109—C
Plans: See also Hospitals, expense insurance plans, (Bureau report), 1384—OS
plans: California Physicians' Service, 58—OS; 395—E
plans: Cleveland Medical Service Association, (citizens' committee) 204
Plans Council meet; committee to cooperate with A. M. A. and Canadian Medical Ass'n, 1290
plans: Farm Security Administration, [Bureau report), 1387—OS
plans for strangers, San Francisco County Medical Society, 270
plans: Medical Society of District of Columbia, 362; 774
state medical society participation providing, A.M.A. committee recommendation, 136
Supply of Physicians for: See Physicians, supply
MEDICAL SLANG, 827—ab
MEDICAL SOCIETY: See also Societies, Medical
of District of Columbia, (Justice Roberts' opinion) 262—E; 267—OS; (cooperates with U. S. P. H. S. in low cost care for federal women workers) 362; (civilian medical service program) 774
of New Jersey, (endowment fund for scientific work) 775
MEDICAL STUDENTS: See Students, Medical
MEDICAL SUPPLIES: See also Apparatus; Dressings; Drugs; Instruments; Needles; Splints
for Russia: See World War II
MEDICAL SUPPLIES—Continued
Medical and Surgical Relief Committee: See Medical and Surgical Relief Committee
"Pharm-Ost-Ltd.", under Hitler's rule, 768
priority for material for production of, 1292
Rumanian commission to buy, 1227
MEDICAL TECHNICIANS: See Laboratories; Technicians
MEDICAL TERMINOLOGY: See Terminology
MEDICAL TESTIMONY: See Evidence
MEDICAL Women: See Physicians, women; Students, Medical, women
MEDICALLY HANDICAPPED: See Crippled; Disability; Handicapped
MEDICINE: See also Education, Medical; Medical Service; Physicians; Surgeons; etc.
Academy of: See Academy
Aviation: See Aviation
Colonial: See Colonial
Congress of: See Congress
Cults: See Chiropractor; Osteopaths
Dental: See Dentistry
experimental, All Union Institute of, report on, Russia, [Lavrentiev] ★436; 521
Fellowships: See Fellowships
Forensic: See Medical Jurisprudence
history, cooling in shock: views of Goodwyn (1788) and Swan (1811), [Waters] 783—C
history, exhibit of rare books from Chauncey Leake's collection, Tex., 1297
history, first cardiac clinic in U. S. at Bellevue, [Cohn] 70—C
history, Holmes' essay on puerperal fever, centenary, 692; [Daily] ★1006; 1094—E
history, incident of Stark, Baillie, and Hunter, [Holman] 966—C; [Moorman] 966—C
history, skin grafts, 1199—ab
history, stomach disorders in great men, [Goldstein] 646—ab
history, Vesalius and the Fabrica, 1543-1943, [Castiglioni] ★382; (celebration at New York Academy) 609; (exhibit in Cleveland Medical Library) 1297
Industrial: See Industrial Health
Institute of: See Institute
Internal: See Internal Medicine
Lectures: See Lectures
Legal: See Legal Medicine (cross reference)
Military: See Medicine and the War; World War II
National Congress of (first), Chile, 365
Organized: See American Medical Association; Societies, Medical
Physical: See Physical Medicine; Physical Therapy
Practice: See Licensure; Physicians, practicing
Preventive: See Preventive Medicine
Prizes in: See Prizes
Profession of: See also Physicians; Specialists; Surgeons; etc.
profession of, and industry, 842—E
progress, and medical journals, 132—E
progress, informing medical officers in armed forces: V-Mail Letter; also Squibb's *Medical Journal Abstracts*, 262—E
Psychosomatic: See Psychosomatic Medicine
Research in: See Research
Royal Academy of: See Royal
Scholarships: See Scholarships
Socialized: See Insurance, health; Medicine, state
Societies: See Societies, Medical
Specialization: See Specialties
state, Beveridge's report, 130—E; 142
Tropical: See Tropical Medicine
Veterinary: See Veterinarians
Women in: See Nurses; Physicians, women; Students, Medical, women
MEDICINE AND THE WAR: See also World War II
A. M. A. participation in the war effort, 1362—OS; (Library and Abstracting Dept.) 1363—OS; 1366—OS; (THE JOURNAL) 1364—OS; (Council on Pharmacy and Chemistry) 1367—OS; (Council on Industrial Health) 1372—OS; (Bureau of Medical Economics) 1383—OS
A. M. A. War Participation Committee, (report of meeting, Dec. 14) 134; (urge state societies to form committees) 458; (cooperate with A. M. A. Council on Industrial Health) 1229—OS
accidents fatal to infants in wartime; 263—E
air raid warning signal system, 684
aliens, oath taken by, 439
ambulance (air) of Relief Wings, Inc., 137
ambulances presented to goyernment, 1359
American College of Surgeons plans 20 war sessions, 694
American Hospital Association creates wartime service bureau, 611
American Red Cross, (M. Fieser's work expanded) 364; (report) 961
anesthesia: choice for seriously wounded, [Beecher] ★899
anesthesia simple holder for giving pentothal sodium, [Hope] ★753
Army: See subhead: U. S. Army; and under various subheads as Aviation; Hospitals
ascorbic acid (vitamin C) under allocation control, 57
aviation, Army Air Force Medical Department officers graduate, Fla., 683
aviation, army flight surgeon, function of, 264

MEDICINE AND THE WAR—Continued
aviation, Civil Air Patrol to fly plasma supplies into stricken areas, 601; 953
aviation, courses to orient medical officers for air forces, 683
aviation, flight surgeons' assistants, 265
aviation medical examiners, 264; 523; 1356
aviation medicine, school of, 25th year, 1355
aviation medicine, symposium on, Boston, 447
aviation physiologists graduated, Texas, 683; 1096
aviation, priorities for life and death emergencies, 204
Baehr (George) to visit Hawaii, 953
biologic products, syringe type packages no longer available, 138
Blanchfield (Florence A.) new supt. of Army Nurse Corps, 1356
blood plasma and transfusion, lectures, demonstration, N. Y., 363; 1170
blood plasma for civilian defense, 137
blood plasma laboratory, Dr. Avendano of Peru visits, 768
blood plasma reserves, 266
Bristow (Rowley), visits Carlisle Barracks, 1096
Buchanan (Beulah Ann), Navy personals, 200
burns, treatment, Circular Letter No. 15, 682
butter makers to reserve 30% for direct war requirements, 352
Caldwell (George M.), commissioned a lieutenant in U. S. Navy, 200
Camp Barkeley, (medical administrative officers), 199; 437
Carlisle Barracks, (discontinue officer candidate school) 136; (2 Brazilian medical observers) 137; (graduate class of medical inspectors) 265; 766; (field training at Medical Field Service School) 265; (graduates of special training course) 600; 1096; ("Doctors in Khaki" movie to be made at, for civilian audience) 766; (Capt. Furbeck graduates) 846; (Brigadier R. Bristow visits), 1096; (training for field work) 1223; (General Morgan and Lieut. Col. Carter visit) 1224; (medical inspectors graduate) 1224
Carter (B. N.) visits Carlisle Barracks, 1224
Chemical Warfare: See also subhead: Gas warfare
chemical warfare course, (at Western Reserve) 447; (New York) 532; (at Northwestern), 683; (teaching day, N. Y.) 1170
children, wartime care, New York, Mayor's Committee, 138; 447; 877; 1101
children, wartime care, survey of, New York State, 692
children, wartime care, women trained by civilian defense classes, 352
civilian medical service program, Medical Society of District of Columbia adopts, 774
civilian war benefits, legislation on, (Bureau report) 1382—OS
color blindness of physician and military service, 1315
Dabney (Albert S.) visits hospitals, 1290
Davis (Addison D.) visits hospitals, 1290
dental equipment for coast guard stations, 138
dentists, quota for, 1289
diabetes and military service; [Joslin] ★198
Diet: See subhead: Nutrition
disease agents, transporting ticks and rats, 840—E
Draftee: See subhead: Soldiers and Recruits
dysentery (bacillary), increasing, 1158—E
Education: See subheads: Medical Education; Medical Students; School; Students; etc.
emergency medical field sets donated to Coast Guard, 1225
Emergency Medical Service in industrial plant catastrophes, [Mould] 860—ab
emergency medical service, Pasadena reorganizes, 1359
Emergency Medical Service, Perry County, Ky., 684
emergency medical service, simplification, 601
emergency mobilization of motor vehicles, 1359
emergency water supply program: OCD Circular No. 26, 351
epidemic control specialists, graduated, 1291
epidemics, Central Epidemic Control Board, members, 762—E
eye glasses and price regulation, 685
first aid station (jungle) in Panama, 1223
Food: See subhead: Nutrition
Fox (Leon A.) promoted to brigadier general, 1159
Franzblau (Abraham N.), civilian defense personals, 767
Furbeck (George N.), graduates, 846
gas masks, care; distribution, 438
gas masks, dermatitis from, [Lewe] ★422
Gas Protection Service of U. S. Citizens Defense Corps, 600
gas specialists, (new courses for) 137; (organize state schools: OCD Letter No. 109), 767
Gaston (Lloyd H.), civilian defense personals, 767
Girl Scouts and Girl Guides, 92
Gonorrhea: See subhead: Venereal Disease
MEDICINE AND THE WAR—Continued
Graham (Evarts), instructs Army officers in surgery, 136
Grant (D. N. W.), visits Africa, 437
Ham (George H.), appointed surgeon, 767
Harlow (Guy W.), promoted, 846
health lectures at Cleveland Health Museum, 204
Hermes (William B.), on active duty, 522
Heroes: See World War II
Hospital: See also under other subheads
hospital, Ashford General (formerly Greenbrier Hotel), 599
hospital, auxiliary workers, training, 525
hospital, Borden General, 1290
Hospital Corps Waves of U. S. Navy, 684; 1225
hospital, Darnall General, 522
hospital (emergency base), nursing executives for, 200
hospital employees wage adjustment, 533
hospital facilities, Navy, 684; 1225
hospital (general), designated for special surgical treatment, 1095
hospital, Hammond General, 1291
hospital, Kennedy General Army, 1096
hospital, McCloskey, named for first medical officer killed, 437
hospital, Nichols General, Louisville, 1095
hospital patients, recreation and reconditioning, 1096
hospital, Percy L. Jones General, at Battle Creek, 845
hospital residencies and, ★1024; ★1025; 1094—E; 1288; (Council report) 1397—OS
hospital ships, 1225
hospital trains, 522
hospital, Walter Reed Hospital's convalescent center, 1290
hospital unit, Evacuation No. 14 on active duty, 57
hospital unit, Loyola, 600
hospital unit, medical officers, number; training for navy service; duties and work, [Lull] ★638; 678—E
hospital unit, Presbyterian (Chicago), 846; 1356
hospital, Valley Forge General, officially opened, 1224
hospital, war conference planned, by Texas Association, 364
hospital, Winchester Hospital, Army takes over, 600
hotels, 3 at Miami Beach taken over by Army, 199
Industrial "cable rash" in Navy yard workers, [Morris & Tabershaw] ★192
Industrial health and safety program in Navy yards, [Drinker] ★822; (discussion) 862—ab; [Lund] 849—ab
industrial health, institutes in, Okla., 692
industrial health, prospects and progress, 840—E
industrial hygiene, Navy officers study, 1170
industrial medical personnel, replacement, (Council report) 1372—OS
industrial mobilization and physician, [Taft] 848—ab
industrial placement of handicapped [Harvey & Luongo] ★100; 681—E
Industrial plants, catastrophe, O.C.D. program for, [Mould] 860—ab
industrial plants, civilian physicians to be employed, 437
industrial plants, contract surgeons wanted, 1095
industrial plants, physicians, educational conference to train, 531
industrial plants, physicians for, 135; (O. W. I. release) 1158—E; 1160
industrial plants, physicians respond to placement, 1102
industrial plants, training professional personnel for, [Selby] 850—ab
industrial roentgen study of Navy yard workers, Philadelphia, 140
industrial shipyard workers, Kaiser's Permanente Foundation, 595—E
industrial shipyard workers, keratoconjunctivitis, 136; [Paul] 71—C; (treatment) 598; [Braley & Sanders] ★999
industrial toxicity of explosives, [McGee] 852—ab
industrial tuberculosis control program, [Parran] ★520
industrial workers absenteeism, 449
insecticide for pup tents, Goodhue "bomb," 846
insecticide (rotenone) now rigidly restricted, 525
interns and residents in air force hospitals, 1223
interns and residents, (restrictions on use; P and A recommendations) 1288; (shortage of, Council report) 1397—OS
internships and accelerated medical program, 56
internships (overlapping), utilize personnel resulting from, 1097
Jorris (E. H.) commissioned lieutenant commander, 364
Kenner (Albert W.), new brigadier general, 199
Kirk (Norman T.) promoted, 1159
kits for submarine chasers, 767
MEDICINE AND THE WAR—Continued
Kneifl (M. R.), analyst for Lend-Lease Administration, 525
laboratory officers (Army training of), 599
Lahey Clinic trains specialists for Army and Navy, 266
licensure and the war (Bureau report) 1375—OS
Lull (George F.) promoted, 1159
Lyle (A. G.), naval dental corps rear admiral, 1225
McGinnis (G. F.), appointed director of Red Cross, midwestern area, 776
malaria (cerebral) in soldier, [Brill & Pellicano] ★1150
malaria control reconnaissance and combat units, 1290
malaria, National Research Council consultant group on, 439
malaria, totaquine dosage, 138
malariology, instruction in, 1291
manpower conservation, Georgia, 1169
Manpower, Medical: See Procurement and Assignment Service
Manual for professional men, 265
Masur (Jack), civilian defense personals, 767
Mayo Clinic provides training for military officers, 600
medical administrative officers graduate, at Camp Barkeley, Texas, 199; 437; (officers from the ranks) 1290
Medical and Surgical Relief Committee, 138; 439; 767
medical attendants for merchant ships, school for intensive training, 1292
medical education and, Army-Navy specialized training programs, 55; [Elliott] ★631; [Dalton] ★633; 678—E; 1396—OS
medical inspectors graduate, 265; 766; 1224
medical officers, number; training; duties and work, [Lull] ★638; 678—E
medical officers promoted to brigadier generals, 1169
medical services for wives and children, 1231—OS; 1379—OS
medical services, National Conference on planning for war and postwar, 764—E; 769—OS; 1094—E
medical services, planning for, in U. S., 130—E; 136
medical society (Mecklenberg County, N. C.), honors members, 522
medical society, Ohio meeting planned as war conference, 610
medical society, St. Joseph County, Ind., Service Bulletin of, 202
medical supplies, priority for material to produce, 1292
Menninger (William C.), commissioned lieutenant colonel, 199
methyl alcohol under complete allocation, 352
military information, guarding, 1359
Molt (Frederick F.) promotion, 1358
Morgan (Hugh J.), new brigadier general, 199; (visits Carlisle Barracks) 1224
narcotics, professional use by medical officers, 136
National Research Council, (creates sanitary engineering committee) 138; (appoints consultant group on malaria) 439; (committee on food composition), 777
Navy: See subhead: U. S. Navy and other subheads
Neuropsychiatry: See also subhead: Psychiatric
neuropsychiatry, Army's school of, opened, 265; 1154—E; [Halloran & Farrell] ★1159
neuropsychiatry in selecting armed forces, 876
nurse's aides, 1163
nurses (Army corps), new supt.: Miss Blanchfield, 1356
nurses (Army corps), 16 made lieutenant colonels, 1355
nurses (graduate), resurvey of, 141
nurses in 38 procurement service offices, 1097
nurses (Navy), promotions for Miss Dauser et al., 767
nurses, pay increased, 199
nurses, shortage; use short term, intensively trained volunteers, [McCook] 538—C
nurses, victory student corps proposed, 768
nurses wanted for civilian and military needs, 602; 1227
nursing and Emergency Medical Service, 685
nursing executives for emergency base hospitals, 200
nursing, National Nursing Council for War Service (needs doctor's cooperation), 842—E; (report) 1227
nursing, Subcommittee on, 768
nutrition: citrus fruits reserved, 525
nutrition, corps of dietitians authorized, 199
nutrition, dehydrated foods cookbook for use of army cooks, 600
nutrition, evaporated milk for infant feeding assured, 764—E
nutrition exhibit at Wright Field, 1224
nutrition, food research section of Navy, 1358
nutrition, hospital training in dietetics examination in, 205
nutrition, invalid diets; OPA Ration Order 13, 1157—E
nutrition, Los Angeles to issue food on prescription for special diet, 439

MEDICINE AND THE WAR—Continued
nutrition, National Research Council committee on food composition, 777
nutrition symposium at Medical College of Virginia, 776
nutrition, use rabbits for food; not pregnancy test, [Weisman & Coates] 1109—C
Office of Civilian Defense: See also under other subheads as Civilian; Emergency Medical Service
Office of Civilian Defense, 137; 200; 266; 351; 438; 600; 684; 767; 953; 1226; 1359
Office of Civilian Defense, list of publications, 1359
Office of War Information, release on physicians supply, 1158—E; ★1160
Officer Procurement Service, function of, 843
Officers: See also subhead: Medical Officers
Officers Manual, 205
Officers Training School at Miami Beach, 137
peptic ulcer in armed forces, [Boles] ★640
physical defects, list which disqualifies for service, 950
physical examination, guide to; examiner's mistakes, (Medical Circular 3) 948—E; 949
physical examination, visual acuity: oculist's equivalents translated into terms for the services, [Linksz] 1316
physical therapy aides, authorize corps of, 199
Physicians: See also subhead: Industrial plants, physicians; Procurement and Assignment; Specialists; etc.
physicians (dislocated), licensure of, 135; 136
physicians, "Doctors in Khaki" movie made at Carlisle Barracks, 766
physicians, Doctors' War Fund to provide $100 monthly to their families, 1101
physicians in service, ophthalmologists to return part fees to, St. Louis, 532
physicians, income tax and, 353—OS
physicians must volunteer from large cities, 1602—E; (remove preferential ratings!) [Bearse & others] 1304—C
physicians needed as replacements in civilian service, 132—E; ★1160
physicians, number in each branch of service, 1163
physicians, one ordered to enlist as a private by Draft Board, 1161
physicians' preference in choice of service, 1289
physicians, quotas of various states and how they were met, 1161
physicians radium supply, disposal of, while in service, 382
physicians, Selective Service bulletin on, 131—E; 133
physicians, special board examinations, 62
physicians, supply, OWI release vs. Procurement and Assignment facts, 1158—E; ★1160
physicians, "teams" for camp hospitals, 135
physicians, wartime graduate medical meetings, 1399—OS
physicians (women), WAAC's need,. [Lull] ★640
physicians (women), in Medical Corps of Army and Navy, (Bureau report) 1379—OS
physicians (women), 6 will graduate at Naval Medical Center, 1358
pneumonia, treatment at Fort Bragg, [Danielsen] 236—ab
Procurement and Assignment, agreement with U.S.P.H.S., 134
Procurement and Assignment Service, A. M. A. Bureau of Medical Economics aid to, 1384—OS
Procurement and Assignment, A. M. A. Council on Industrial Health and, 1229—OS; 1372—OS
Procurement and Assignment Service, Army-Navy Specialized Training Course, 55; [Elliott] ★631; [Diehl] ★635; 678—E
Procurement and Assignment Service, new state chairman: Dr. McKay, Me., 1403
Procurement and Assignment, procedure of processing physicians, etc.; 843
Procurement and Assignment, quotas of various states; how met, 1158—E; 1161
Procurement and Assignment Service recommendations on use of interns and residents, 1288
Procurement and Assignment Service Suboffice at A. M. A. headquarters, 1363—OS
Procurement and Assignment Service train industrial health personnel, [Selby] 850—ab
procurement of medical officers for Army in 1943, 350; 843
Psychiatric: See also subhead: Neuropsychiatry
psychiatric outpatient department at Mitchell Field, 1159
psychiatric reasons; reject or discharge for, memorandum to physicians, 1095
psychiatrist, Nita M. Arnold, at WAAC center, 686
Residencies: Residents: See subheads: Hospital; Interns
quinine, further conservation, 439
quinine, National Quinine Pool, 434—E; 842—E; 845
Rankin (F. W.) new brigadier general, 199
MEDICINE AND THE WAR—Continued
Reekie (D. A.) in civilian defense, 767
refrigerating systems, preference ratings for material to repair, 1359
Reggio, (A. W.) in civilian defense, 767
rehabilitation of selectees with hernia, Illinois, 439
rehabilitation, rest home for torpedoed seamen, 1358
rubber substitute made of linoleic acid by Bauer & Black, 137
rubber: tips to save, 611
Rusk (H.A.) in charge of recreation and reconditioning program for hospital patients, 1099
safety campaign opened, 272
sanitary engineering committee, National Research Council creates, 138
sanitary engineers, procurement of, 602; 1289
"Sanitation Wardens" organized, N. J., 691
scapula (winged) in soldier from lifting, [Hauser & Martin] ★667
School: See also subhead: Medical Attendants; Neuropsychiatry
school of military government at U. of Virginia, 683
Selective Service bulletin on physicians, students, etc., 131—E; 133
Selective Service, commissioned officers (U. S.P.H.S.) classified as IV-B, 352
ships named after famous Johns Hopkins physicians, 1358
Simmons (J. S.) made brigadier general, 1159
Societies: See subhead: Medical Society
Soldiers and Recruits: See also other subheads as: Physical Defects; Students; etc.
soldiers and recruits, deafness (feigned) in, detecting, [Pitman] ★752
soldiers and recruits, reject or discharge for psychiatric reasons, memorandum, 1095
Southworth (Hamilton) joins OCD, 601
specialists in tropical medicine, training, 55
specialists, Lahey Clinic to train, 266
specialists, U. of Michigan to train, 437
specialists unit from Cleveland Clinic, 1291
specialists, utilization in armed service, [Lull] ★638; 678—E
specialties, instruction by Navy, 1358
streptococcic septic sore throat in army camp, [Bloomfield & Rantz] ★315
Students: See also subhead: Medical Students
students, Army personnel to attend technical schools, federal legislation, 1379—OS
students (soldier); intellectual workers and physical exercise for, 516—E; [Oberteuffer] 1409—C
surgical sutures: nylon, 1292
Tainter (M. L.) California state gas officer, 525
transportation for casualties: OCD letter, 1226
Truax Field, medical meeting, 686
tuberculosis, roentgen survey at U. S. Navy Yard, Philadelphia, 140
U. S. Army: See also under other subheads
U. S. Army leases Michigan's state laboratory facilities, 1224
U. S. Army, Medical Department, accomplishments; health and disease rate, 762—E
U. S. Army-Navy E awards: (Winthrop Chemical Co.) 57; (American Optical Co.) 200; (Davis and Geck) 522; (Merck & Co.; Burroughs, Wellcome; General Electric X-Ray) 685; (Parke, Davis; Sharp & Dohme; Ciba) 953; (Baxter Laboratories; James King & Sons) 1292
U. S. Army new brigadier generals, 199; 1159
U. S. Army promotions in medical dept., 265
U. S. Army, rank on initial appointment as medical officers, 56
U. S. Army vigilant in preventing food poisoning, 1156—E
U. S. Navy: See also under other subheads
U. S. Navy, *Bunced*, 1225; 1363—OS
U. S. Navy consultant board, 1097
U. S. Navy medical corps, examinations for, 1291
U. S. Navy, medical officers, class of, 1097
U. S. Navy, Medical Officers, program expanded for training, 57
U. S. Navy Medical School graduates, 351
U. S. Navy needs binoculars, 200
U. S. Navy personals, 1225; 1358
U. S. Navy's *Weekly News*, 684
venereal disease, chancroidal infection, treatment: diagnosis, [Greenwald] ★9
venereal disease clinic at reception center for newly inducted soldiers, 1096
venereal disease control in prostitutes, [Strauss & Grunstein] ★1187
venereal disease drops to new low in Navy, 1358
venereal disease, prophylaxis (chemical) of Army, [Greenwald] ★10
venereal disease, prophylaxis, sulfathiazole orally, [Loveless & Denton] ★827
venereal disease rate in armed forces, 762—E
venereal disease treatment centers, 777; 847
WAAC center, psychiatrist (Nita Arnold) at, 686
WAAC, need for women physicians, [Lull] ★640; 1379—OS
MEDICINE AND THE WAR—Continued
WAAC, 5 A. M. A. employees enlist, 1362—OS
WAVES, 684; 1225
Wells (C. Raymond) promotion, 1358
White (Edward C.), promoted, 200
Zimmerman (E. A.) made lieutenant colonel, 437
MEDICINES: See Drugs
MEDICOLEGAL: See Legal Medicine (cross reference); Medicolegal Abstracts at end of letter M
MEDITERRANEAN Disease: See Anemia, erythroblastic (Cooley)
MEETINGS: See Societies, Medical; list of societies at end of letter S
MEGRAIL Collection at Western Reserve, 60
MELANCHOLIA, prefrontal leukotomy in, [McGregor] 466—ab
MELANOMA, cutaneous; 60 cases, metastases, [Driver & MacVicar] ★413
MEMBRANE, Mucous: See Mucous Membranes (cross reference)
Treatment: See Burns
MEN: See also Adolescence; Great Men; Male (cross reference); Manpower
pubescence, [Schonfeld] ★177
MENADIONE bisulfite (Council report), 893
Thyioquinone, N.N.R. (Squibb), 677
MÉNIÈRE'S Syndrome: See Vertigo, aural
MENINGES, hemorrhage (subarachnoid) in hemophilia, [Barr (A. others] ★933
hemorrhage, subdural hematoma after blast injuries, [Abbott & others] ★664; ★739; 1220—E
iodized poppyseed oil effect on, [Craig] 288—ab
MENINGITIS: See also Meningoencephalitis
Acute Aseptic: See Choriomeningitis
cerebrospinal epidemic, [Harries] 84—ab
cerebrospinal epidemic, outbreaks increasing, Calif., 608
cerebrospinal epidemic, sulfadiazine, sulfonamide, also with serum for, 516—E
death rate in armed forces, 762—E
etiology, higher fungi, [Shozland] 1179—ab
in infants, sulfonamide for, [del Carril] 468—ab
Lymphocytic: See Choriomeningitis
Meningococcic: See Meningitis, cerebrospinal epidemic
otitic, treatment before and after sulfonamide era, [Williams] 462—ab
pneumococcic, sulfonamides for, [Hodes & others] ★1334
purulent, [Feldman] 155—ab
streptococcic, after cranio-cerebral trauma; recovery after sulfapyridine and sulfadiazine, [Riley & Waugh] ★338
streptococcus, sulfonamides for, [Hartmann] 890—ab
treatment, sulfadiazine efficacy; toxicity, [Finland] 622—ab
tuberculous, sulfone compounds for (especially promin), 798
MENINGOCOCCUS Meningitis: See Meningitis, cerebrospinal epidemic
MENINGOENCEPHALITIS in epidemic pleurodynia, [Howard & others] ★925
MENNINGER Foundation: See Foundations
MENOPAUSE, estrone treatment of coffee colored spots on face, [Rocca] 85—ab
industrial aspects (A. M. A. Section Committee report), [Hesseltine & others] ★801
symptoms, diethylstilbestrol for treatment, [Abarbanel & others] ★1124; ★1128
symptoms, testosterone pellet implantation for, [Greenblatt] ★19; ★20
MENSTRUATION, Cessation of: See Amenorrhea; Menopause
diethylstilbestrol dosage recommended, [Abarbanel & others] ★1125
Disorders: See also Dysmenorrhea
disorders, Hillman's D Compound, 280—BI
disorders, intermittent and increasing menorrhagia in woman 55, ovarian neoplasm? 381; (reply) [Berry] 1186
disorders, irradiate spleen and pituitary for, affect offspring? [Kaplan] ★1199
disorders, testosterone propionate implantation in, [Greenblatt] ★17
epilepsy (petit mal attacks) associated with, 630
inducing, with gonadotropins, [Rydberg & Pedersen-Bjergaard] ★1117
industrial aspects (A. M. A. Section Committee report) [Hesseltine & others] ★800
psychosis preceding, progesterone in, [Schmidt] ★190
MENTAL DEFECTIVES: See Idiocy
MENTAL DEPRESSION: See Melancholia
MENTAL DISORDERS: See also Dementia Precox; Insanity; Psychoses
Hospitalization in: See Hospitals, psychiatric; Hospitals, state
Industrial placement and, [Bartle] ★1002
Postpartum: See Insanity, puerperal
psychiatric outpatient dept. at Mitchell Field, N. Y., 1159
selectees reject or discharge for, memorandum to physicians, 1095
treatment, electric shock and organic heart disease, [Evans] 1307—ab
treatment, electrocoma, [Fetterman] 286—ab

MENTAL DISORDERS—Continued
treatment, prefrontal lobotomy, [Freeman] 459—ab
MENTAL HEALTH: See Mental Hygiene
MENTAL HOSPITALS: See Hospitals, psychiatric; Hospitals, state
MENTAL HYGIENE, clinic, Los Angeles Psychiatric Service established, 959
commissioner (Dr. Tiffany) resigns, N. Y., 1170
National Committee for, research in mental hospitals, 777
MENTAL WORK, and physical exercise for soldier-students, 516—E; [Oberteuffer] 1409—C
MENTHYL SALICYLATE, protective ointment for welders, (correction) 365
MERCK and Co., Army-Navy E Award to, 685
MERCURY, action on Staphylococcus and Escherichia, [Heyt] 465—ab
fulminate of, industrial hazard, [McGee] 852—ab
MESENCEPHALON, tractotomy for pain, [Walker] 458—ab
MESOTHELIOMA of atrioventricular node, [Mahaim] 294—ab
METABOLISM: See also under names of specific substances as Estrogens; Fat; Phosphate; etc.
basal, and fatigue in disease, 1093—E
basal, supernormal circulation in resting subject, [Starr] 1111—ab
basal, testing in nervous patient, 92
estradiol and testosterone effect on, [Knowlton] 542—ab
ultraviolet radiation effect on, (Council report) ★514
METABOLITES, anti-infective agent, [Smith] 851—ab
METAL: See also Cadmium; Copper; Gold; Lead; Mineral; Silver
black dermographism, [Urbach & Pillsbury] ★485
foreign body finder: the locator, [Moorhead] ★123
implant: tantalum to repair cranial defects, [Pudenz] ★478; [Fulcher] ★931
light, lesions caused by, [Sedlacek] 86—ab; (Correction) 220
poisoning, can hair turn white over night? 161
scrap, instruments rescued from, 138
METASTASES: See Abscess; Cancer; Melanoma
METEOROLOGY: See Seasons; Weather
METHIONINE, role in nutrition, 765—E
viral chemoprophylaxis, 435—E
METHYL ALCOHOL under complete allocation, 352
METHYL TESTOSTERONE: See Androgens
dl-**METHYLAMINOBENZENE**: See Dimethylaminobenzene
METHYLBROMIDE, fumigate burrow openings to control plague, [Stewart] 283—ab
3,3'-**METHYLENE BIS**- (4-hydroxycoumarin); See Dicoumarin
METHYLNAPHTHOQUINONE: See Menadione
METHYLOCTENYLAMINE Hydrochloride (octin) action on colon, [Atkinson & others] ★648
METRAZOL in auricular paroxysmal tachycardia, [Boyd] 791—ab
shock therapy, curare to modify, [Woolley] 543—ab
shock therapy, hypertension after, [Menninger] 1248—ab
METRIC system, use instead of apothecary system, (Council discusses) 839
METROPOLITAN Life Insurance Co., (increase in catastrophe fatalities) 611; (fatalities from exposure to cold) 878
METYCAINE: See Anesthesia, continuous caudal
MICHELSON, A. S., missing in action, 1235
MICHIGAN: See Detroit
University of: See University
MICKLE (Charles) Fellowship, 960
MICROBIOLOGY: See Bacteriology
MICROCEPHALY after pelvic irradiation during pregnancy, 54—E
MICROCOCCUS tetragenus, pneumonia caused by, [Tobin] ★41
MICROORGANISMS: See Bacteria
MICROSCOPE, darkfield, to diagnose secondary syphilitic lesions, [Agee] 1179—ab
electron, at Illinois Institute of Technology, 446
electron, in asbestosis, [Kühn] 87—ab; (correction) 220
MICTRITION: See Urination
MIDDLE AGE: See under Age
MIDWIVES, trend of infant mortality and birth rate, 349—E
MIGRAINE: See also Headache
treatment, potassium thiocyanate, [Hines] 1307—ab
MIGRATION, movement westward, 504—ab
MILITARY Medicine; Service: See Medicine and the War; World War II
MILIUM, ultraviolet rays for, (Council report) ★129
MILK: See also Casein; Cheese
borne epidemic of brucellosis, [Borts & others] ★319
borne outbreak of sore throat, N. Y., 1297
MILK—Continued
cleaner, government inaugurates scheme for, England, 275
consumed by industrial workers, [Goodhart] ★95; (how to encourage) [Bristol] 871—ab; (Canada's experience) [Pett] 871—ab
consumption per capita, 1909-1940, [Stiebeling] ★833; ★836
evaporated, for infant feeding assured, 764—E
high protein beverage (milk, dryco, egg white), [Bauman & Gage] ★1283
Human: See also Infants, feeding; Lactation
human, Staphylococcus aureus in, [Duncan] 1181—ab
pasteurization at home, 898
Leg: See Phlegmasia alba dolens
research, Borden Co. prize awarded to E. O. Whittier, 1250
skimmed, bread made with, nutritive value, [Williams & others] ★943
Sugar: See Lactose
supply, France, 847
suppy, state regulations amended, Md., 876
vitamin D, Council report, 1369—OS
MINERAL: See also Copper; Gold; Lead; Metals; Silver; etc.
diet content for the aged, [Tuohy] ★47
water, artificial, (Council discusses) 838
water, Dynell Spring Water Co., 337—BI
MINERALVITA, 699—BI
MINERS, silicosis, Ida., [Ellis] 890—ab
MINNESOTA *Medicine:* See Journals
plan: control of medical testimony, [Hammes] 857—ab
tuberculosis control, county accreditation plan, [Myers] ★921
MISCARRIAGE: See Abortion
MISSISSIPPI, University of: See University
MITSUDA Reaction: See Lepromin test
MOBILIZATION: See Medicine and the War
MOLASSES as syrup substitute, 196—E
MOLD (fungi) allergy in butcher, 896
identification, 898
MOLD, plastic ear stopper, [McCoy] ★1330
MOLE, Pigmented: See Nevus pigmentosus
MONILIASIS, subacute endocarditis, [Pasternack] 151—ab
MONSTERS: See Fetus, parasitic
MONUMENTS: See Physicians, monuments to
MOORE introducer for spinal anesthesia, [Hand] ★33; [Moore] 35—ab
MOORHEAD-Berman foreign body finder, [Moorhead] ★123; (Navy given funds to buy) 1359
MOOSER, VON H., Royal Academy of Medicine (Barcelona) membership, 365
MORBIDITY: See Disease
Statistics: See Vital Statistics
MORPHINE, cause of death in asthma, [Unger & Wolf] ★325; [Harsh] 329—ab
oral use, technic, (reply) [Davis] 1316
Sulfate: See also Anesthesia
sulfate, action on colon, [Atkinson & others] ★648
sulfate as obstetric analgesic, [Mengert] 28—ab
dose for wounded, warning, England, 778
MORQUIO Day, 533
MORRIS Lecture: See Lectures
MORTALITY: See Accidents, fatal; Death; Infants; Maternity; Physicians, deaths of; Vital Statistics; etc.; under names of specific diseases as Malaria
MOSQUITOES control with Goodhue "bomb," 846
encephalitis virus hosts, [Hammon] ★560
yellow fever in Brazil, 963
MOSS, Irish, syrup substitute, 196—E
MOTHERS: See Families; Maternity; Pregnancy
MOTION PICTURES: See Moving Pictures
MOTOR Vehicles: See Automobiles
MOULTON, R. S., report on Cocoanut Grove fire, 597—E
MOUTH: See also Lips; Teeth; Tongue
Journal of Oral Surgery, 611
lesions in sprue, [Kaufman & Smith] ★168
poliomyelitis ports of entry, 348—E
virus papilloma of oral lining, 1355—E
MOVING PICTURES, "Doctors in Khaki" made at Carlisle Barracks, 766
for loan by A. M. A. (Bureau report) 1389—OS
on registered nurse by American College of Surgeons, 294
on sulfonamide therapy by Lederle Laboratories, 364
MRS: For trade names beginning with "Mrs." see under name concerned as Paley
MUCOUS Membranes: See Endometrium; Stomach; Tissues; Vagina
MUCUS secretion in peptic ulcer: Lenormand theory, 381
MULLEIN cure for alopecia, 146—BI
MUNITIONS: See also Bombs
plant, employing handicapped in, [Harvey & Luongo] ★104
toxicity of explosives, [McGee] 852—ab
MURDER: See also Suicide
of physicians, 196—E
trial, photographic method for identifying remains at, 207
MUSCAE volitantes, floating opacities of eyes, 92
MUSCLES: See also Tendons
Cardiac: See Myocardium
chronic thyrotoxic myopathy, [McEachern] 83—ab
Dystrophy: See Dystrophy
Exercise: See Exercise
oblique inferior, operations on, 1250
pain in British army, [Good] 1416—ab
pectoral, biopsy in hypertension, [Daley & others] ★385
percentage of total body weight, [Freudenberger] 784—C
physiology, advances in, 347—E
porphyrins, use in healing of wounds, 1237
scalenus anticus syndrome or intervertebral disk rupture, [Semmes & Murphey] ★1209
stimulation, McIntosh Sinustat, (Council report) 591
MUSHROOMS, fungi as food, 64
MYALGIA, Epidemic: See Pleurodynia, Epidemic
nonepidemic: See Muscles pain
MYASTHENIA GRAVIS: See also Dystrophy, muscular
prostigmine test; treatment, [Constans] 153—ab
thymoma removal in, [Turnbull] 459—ab
MYCOSIS, Cutaneous: See Dermatophytosis
fungoides, total body Irradiation, [Medinger] 458—ab
treatment, ultraviolet rays (Council report), ★127
wartime dermatology, [Carslaw] 83—ab
wound infections, [Smith] 851—ab
MYELITIS: See Encephalomyelitis; Spinal Cord
MYELOGRAPHY: See Spinal Canal, roentgen study
MYELOMA, multiple, total body Irradiation, [Medinger] 458—ab
MYELOPATHY: See Spinal Cord
MYIODESOPSIA: See Muscae volitantes
MYOCARDITIS, rheumatic, liver function in, [Chávez & others] ★1276
MYOCARDIUM Infarction: See also Arteries, coronary occlusion; Thrombosis, coronary
Infarction, sudden collapse with severe precordial pain, 471
Infarction, syphilitic coronary stenosis with, [Burch] 888—ab
infarction, Weltmann serocoagulation band in, [Delaney] 371—ab
MYOMA, experimental fibroids, [Lipschütz] (correction) 694
fibromyomas (uterine), [Torpin] 73—ab
uterine, testosterone implantation for, [Greenblatt] ★18
MYOSIN, enzyme adenylpyrophosphate identical with, 347—E
MYOSITIS, Epidemic: See Pleurodynia, Epidemic

Medicolegal Abstracts

ADVERTISING: chiropractic; as evidence of practice, 150
drugs; fraudulent statement concerning; liability of manufacturer, 975
telephone directory; as evidence of practice of healing art, 886
AMOEBIC DYSENTERY: See Dysentery
AUTOPSIES: unauthorized; next of kin has right of action, when, 72
unauthorized: wife has right of action, 72
workmen's compensation acts; employer's right, 72
BLINDNESS: dinitrophenol as cause of, 975
CARBON TETRACHLORIDE; poison act; labeling requirements inapplicable to, 214
CHIROPRACTORS: See Chiropractic Practice Acts; Medical Practice Acts
CHIROPRACTIC PRACTICE ACTS: advertising in telephone directory as evidence of practice, 886
amendment by reference statute; validity, 886
examining board; abolished by reference statue; validity, 886
CORPORATIONS: medicine; hospital undertaking to practice; liability for negligence of employee, 701
CRIMES: drunkenness as a defense, 1242
insanity as defense, 1242
DINITROPHENOL: blindness attributed to, 975
"DOCTOR": restrictions as to use of title valid, 620
DRUGS: advertising; fraudulent statements, 975
chiropractors; right to use, 785
dinitrophenol: blindness attributed to, 975
medical literature; description of new drug; failure to state dangers as fraud on user, 975
medical literature; liability of manufacturer for fraudulent statements in, 975
DRUNKENNESS: blood tests; admissibility, 702
criminal responsibility in relation to, 1242
DYSENTERY: amoebic; workmen's compensation in relation to, 456
EVIDENCE: See also Malpractice; Medical Practice Acts
drunkenness; blood tests, 702
hypothetical questions; basis of, 539
GUARDIANSHIP: physical examination of incompetent; court's right to order, 370
HARRISON NARCOTIC ACT: bona fide medical practice; "curbstone" sale by physician, 150
sales; "curbstone" sale by physician, 150

Medicolegal Abstracts—Continued
HOSPITAL SERVICE PLANS: see Hospitals, in General
HOSPITALS, CHARITABLE: employees; liability for negligence of, 1110
municipal hospital; as constituting, 1110
HOSPITALS FOR PROFIT: burns; sodium hydroxid, 701
medicine practiced by; liability for negligence of employee, 701
technician; negligence of, 701
HOSPITALS, GOVERNMENTAL: burns; electric cauterization applied near alcohol soaked gauze, 1110
electric cauterization; applied near alcohol soaked gauze; patient burned, 1110
"equal privileges" construed, 886
exclusion of practitioners, 886
interns; liability for negligence of, 1110
municipal hospital; operation of as a proprietary function, 1110
surgery; restrictions on associate staff members, 886
HOSPITALS, IN GENERAL: hospital service plans; as insurance, 1305
hospital service plans; tax exempt status of corporation, 1305
INDEPENDENT CONTRACTORS: interns, 1110
INSANITY: criminal responsibility; criteria, 1242
guardianship proceedings; court order requiring incompetent to submit to medical examination; validity, 370
INSURANCE, ACCIDENT: "accidental means" defined, 1410
coronary occlusion in relation to, 1410
dancing; coronary thrombosis and death, 1410
INSURANCE, IN GENERAL: hospital service plans as constituting insurance, 1305
INTERNS: as independent contractors, 1110
hospital's liability for negligence of, 1110
MALPRACTICE: allergy tests; sodium hydroxid; use of insufficiently diluted solution, 701
burns; sodium hydroxid used in allergy tests, 701
evidence; res ipsa loquitur; sponges, 539
evidence; witnesses, expert; hypothetical questions; basis of, 539
foreign bodies; sponges; res ipsa loquitur, 539
skill and care; standards; doctors of medicine, 539
sponges left in patients; res ipsa loquitur, 539
MEDICAL PRACTICE ACTS: advertisements; as evidence of practice, 150, 886
amendment by reference statute; validity, 886
asthma remedy; sale of, 282
chiropractors; advertisements as evidence of practice, 150
chiropractors; drugs; no right to use, 785
chiropractors; evidence of practice, 1174
chiropractors; special provision in act not necessary, 1174
chiropractors; surgery; no right to practice, 785
chiropractors; unlicensed practice by practitioner, 1174
"doctor"; naturopath's use of title, 620
"doctor"; restrictions as to use, 620
drugs; chiropractor's right to use, 785
drugs; sale of, 282
evidence; acts prior to date of violation alleged in complaint admissible, 1174
evidence; chiropractic; proof of practice, 1174
evidence; other crimes, 785
examining boards; abolished by reference statute; validity, 886
exemptions; domestic remedies, 282
exemptions; nurses, 282
indictment; averments; degree of particularity required, 282
indictment; averments; fees, 282
indictments; filing by prosecuting attorney in absence of complaint, 785
indictments; statutory language; use of sufficient, 785
licenses; revocation; board record as evidence on appeal, 620
licenses; revocation; trial de novo on appeal, 620
licenses; specific prohibition against unlicensed practice not necessary, 1174
naturopath; use of "N.D." in signs, 620
naturopath; use of title "doctor", 620
penalty; specific prohibition against unlicensed practice not necessary, 1174
surgery; chiropractor may not practice, 785
telephone directories; advertising in as evidence of practice, 886
OBESITY: dinitrophenol as cause of blindness, 975
PHARMACISTS: prophylactics, venereal; sale at wholesale, what constitutes, 1410
PHYSICAL EXAMINATIONS: guardianship proceedings; court's inherent right to order examination of incompetent by physicians selected by petitioner, 370
POISONING: carbon tetrachloride; manufacturer's liability for failure to label as poison, 214
POISONS: label; statutory requirement inapplicable to carbon tetrachloride, 214
PROPHYLACTICS: venereal diseases; sale at wholesale; what constitutes, 1410
ROCKY MOUNTAIN SPOTTED FEVER: workmen's compensation in relation to, 149
STRAIN (Over-exertion): coronary thrombosis, 1410
TAXES: hospital service plans; exempt status of corporation, 1305
occupational; exemption for first two years of practice, 150
TELEPHONE DIRECTORIES: advertising in as evidence of practice of healing art, 886
THROMBOSIS: coronary; strain in relation to, 1410
coronary; accident insurance in relation to, 1410
VENEREAL DISEASES: prophylactics; sale at wholesale; what constitutes, 1410
WATER SUPPLY: amoebic dysentery; workmen's compensation, 456
WORDS AND PHRASES: "accidental means," 1410
"bona fide medical practice," 150
"charitable and benevolent institution," 1305
"doctor," 620
"equal privileges," 886
"franchise tax," 1305
"indemnity," 1305
"insurance," 1305
"practiced his profession," 150
"serious and wilful misconduct of employer," 456
"wholesale," 1410
WORKMEN'S COMPENSATION ACTS: autopsies; employer's right in absence of claim for compensation, 72
autopsies; insurer's right, 72
dysentery; amoebic; drinking water as cause of, 456
Rocky Mountain spotted fever, 149
"serious and wilful misconduct of employer" defined, 456
water; employer's violation of statute with respect to drinking water, 456

N

N. N. R.: See American Medical Association, New and Nonofficial Remedies; and under name of specific products as Acid, ascorbic; Diethylstilbestrol; Sulfathiazole; etc.
NAILS, ridged fingernails, 713
NAPHTHALENE, chlorinated, Halowax dermatitis, [Morris & Tabershaw] ★192; 471
NAPHTHOQUINONES having Vitamin K Activity: See Menadione; Vitamin K
NARCOTICS: See also Cannabis; Harrison Narcotic Act; Morphine; Opium
Houston, (N. S.) paroled, 530
uniform state laws, (Bureau report), 1378—OS
professional use by medical officers, 136
NASAL: See Nose
Catheter: See Catheter
Sinuses: Sinusitis: See Sinuses, Nasal; Sinusitis, Nasal
NASOPHARYNGITIS: See Colds
NATHAN, GEORGE JEAN, and mullein cure for alopecia, 146—BI
NATIONAL: See also American: International; list of societies at end of letter S
Citizens Committee follow-up on White House Conference, 533
Committee for Mental Hygiene report on research in mental hospitals, 777
Conference on Cooperation in School Health Education, (Bureau report) 1374—OS
Conference of Governmental Industrial Hygienists, (meeting) 878
Conference of Normal and Pathologic Anatomy: Histology and Embryology (1st), 450
Conference on Medical Service (17th annual session) 448
Conference on Planning for War and Post-war Medical Services, (proposed) 132—E; 136; 764—E; (program) 769—OS; 1094—E; 1228—OS
Congress of Parents and Teachers, (Bureau report) 1374—OS
Defense: See Medicine and the War; World War II
Drug Company, (Dr. Meeker new medical director) 272
Education Association-A. M. A. joint committee on health problems in education, 1228—OS; 1374—OS
Fire Protection Association, Moulton's report on Cocoanut Grove fire, 597—E
Foundation for Infantile Paralysis: See Foundations
Health Advisory Council, U. S. Chamber of Commerce creates, 693
Health Council Committee for Study of Voluntary Health Agencies, 1374—OS
Malaria Society and its official organ, 349—E
Negro Health Week, 693
Noise Abatement Council Achievement Award, 612
Nursing Council for War Service, (needs cooperation of physicians) 842—E; (report on no. of new students admitted; etc.) 1227
nutrition program (Canada) 777; (for industry) [Goodhart] ★823
Peerless Remedy, 538—BI
Quinine Board, national quinine pool at, 434—E; 842—E; 845
NATIONAL—Continued
Research Council, (committee on sanitary engineering) 138; (grants for endocrinology research) 205; (consultant group on malaria) 439; (committee on food composition) 777; (Committee on Nutrition in Industry) [Cowgill] ★818; (Food and Nutrition Board) [Stiebeling] ★835; ★836; ★837
Roster of Scientific and Specialized Personnel, [Elliott] ★631; 678—E
Safety Council, (report traffic deaths show decrease) 273; (accidental deaths in 1942) 694; (Committee on Tests for Intoxication) 1377—OS
Science Fund of National Academy of Sciences Mayer award, 1405
Society for the Prevention of Blindness (Dr. Schoenberg heads tonometer station) 140
Tuberculosis Association meeting canceled, 1405
War Labor Board order no. 26: adjustments of wages of hospital employees, 533
Yellow Fever Service of Brazil, 1941 annual report, 963
NATURALIZATION: See United States citizenship
NAUSEA: See also Vomiting
reactions to diethylstilbestrol, [Abarbanel & others] ★1127
NAVY: See also Ships; Submarine
Royal, vitamin C nutrition in, [McNee] 546—ab
NAVY, UNITED STATES: See also Medicine and the War
Medical corps, (examination for) 1291; (women physicians in) 1379—OS
Bumed, medical news letter, 1225; 1363—OS
E Award: See Medicine and the War, U. S. Army-Navy E award
food research section, 1358
medical education plans, 55
medical officers class, 351; 1097
medical officers, expand program for training, 57
needs your binoculars, 200
Specialized Training Course, 55; [Elliott] ★631; [Dalton] ★633; [Diehl] ★635; 678—E
venereal disease drops to new low in, 1358
Weekly News, 684
yard, health and safety program in, [Drinker] ★822; (discussion) 862—ab; [Lund] 849—ab
yard, roentgen survey, Philadelphia, 140
yard workers, cable rash or Halowax dermatitis in, [Morris & Tabershaw] ★192
NAZISM: See Germany
NECK: See also Throat
cricks in, [Semmes & Murphey] ★1209
NECROPSY: See Autopsies
NECROSIS: See Liver
NEEDLES, hypodermic, use duodenal tube in washing, [Oelgoetz] 1186
NEFF'S Glan-Tex Tonic, 783—BI
NEGROES, Carver (George Washington), death, 270
commissioned as second lieutenants at Camp Barkeley, 199
gonorrhea and chancroid prevented by sulfathiazole orally, [Loveless & Denton] ★827
National Negro Health Week, 693
physicians, patient load, [Ciocco & Altman] ★509
pneumonia, mortality, Pa., [Bortz] ★110
rheumatic fever in, [Bruno] 463—ab
sarcoid type of tuberculosis in, [Thomas] 1111—ab
starch eating and nutrition deficiency, 1250
syphilis, gonorrhea and chancroid in troops in 1918, [Greenwald] ★9
tumoral calcinosis, [Inclan] ★490
uterine fibromyomas in [Torpin] 73—ab
NEISSERIA gonorrhoeae: See Gonococcus
NEOPLASMS: See Cancer; Sarcoma; Tumors; under region or organ affected
NEOPRONTOSIL (azosulfamide): See Sulfonamide Compounds
NEOSTIGMINE (prostigmine) methylsulfate stimulates colon, [Atkinson & others] ★648
test in diagnosing myasthenia gravis, [Constans] 153—ab
treatment of glaucoma, [Kull] 467—ab
treatment of tinnitus aurium, [Ysander] 547—ab
NEOSYNEPHRINE hydrochloride, vaporized; New York Academy report, ★750
NEPHRECTOMY: See Kidneys excision
NEPHRITIS: See also Perinephritis
glomerular, vs. outside temperature, [Byfield & others] ★118
hemorrhagic Bright's disease, danger of protein therapy, [Taylor & Page] ★754
Hypertensive: See Nephrosclerosis, arteriolar
interstitial hematogenous, [Mathews] 544—ab
rheumatic fever diagnosed as, [Hansen] ★987
"stare" in Bright's disease, [Hanes] ★1152
Tuberculous: See Kidneys tuberculosis
NEPHROSCLEROSIS, arteriolar, [Castleman & Smithwick] ★1258
NEPHROSIS: See Kidneys, disease
NERVES: See also Nervous System; Neuralgia; Neuritis; Neurology; Neuropathy
cervical (6th and 7th) syndrome, [Semmes & Murphey] ★1209
facial, neurinoma, [Roberts] 1310—ab

NERVES—Continued
5th, 9th and 10th, ports of entry of poliomyelitis, 348—E
injury, Russian All Union Institute discusses, 436; 521
optic atrophy from arsenicals, [Longley] 543—ab
optic, papilledema in craniocerebral gunshot wounds, [Murzin] 710—ab
optic, retrobulbar neuritis from multiple sclerosis, [Benedict] 288—ab
Paralysis: See Paralysis
peripheral, gunshot wounds; histamine for pain from, [Rusetskiy] 710—ab
plantar, neurofibroma (neurinoma) [Hauser] ★1217
presacral neurectomy for dysmenorrhea, [Rutherford] 891—ab
Reflex: See Reflex
repair traumatic gaps; "sleeve graft," [Bodlan] ★662
Sciatic: See also Sciatica
sciatic, injury from injecting paraldehyde intramuscularly [Woodson] ★1343
spinal, symptoms in prostate cancer, diethylstilbestrol for, [Clarke & Vlets] ★199; (correction) 694
supply to uterus and birth canal, [Hingson & Edwards] ★225; ★227; 260—E
ulnar, persistent pain after contusion, 382
vagal stimulation (continued) produces hyperinsulinism, [Portis & Zitman] ★569
NERVINE, Catawba's, 280—BI
NERVOUS SYSTEM: See also Brain; Nerves: Nervous System, Sympathetic; Spinal Cord
central, and lipid metabolism, [Davison] 290—ab
central, in tetanus, [Baker] 461—ab
Disease: See also Encephalitis, Epidemic; Encephalomyelitis: etc.
disease, under Hitler's rule, 266
disorders with recurrent ulcers of leg, 1316
Immersion blast injuries, 679—E
in manganese poisoning, [Voss] 87—ab; (correction) 220
insulin coma in schizophrenia, [Pinto Pupo] 467—ab
nervous indigestion, 1001—ab
sulfonamide toxic action on, [Puhr] 467—ab
Syphilis: See Neurosyphilis
treat shock by direct action on, [Stern] 545—ab
NERVOUS SYSTEM, SYMPATHETIC, and shock, [Tomb] 1113—ab
parasympathetic supply of cerebral vessels, affect vasomotor system? 224
NEURALGIA, chest pain in Canadian soldiers, [Heaton] 460—ab
glossopharyngeal (tic douloureux), [Streit] 289—ab
NEURASTHENIA, use of gymnasium in, [Solomon] 865—ab
NEURECTOMY: See Nerves, presacral
NEURINOMA of facial nerve in middle ear and mastoid, [Roberts] 1310—ab
of foot, [Hauser] ★1217
NEURITIS, acute, after antirabies treatment, spinal cord abscess, etc., [Freile] 548—ab
of Noninfectious Origin: See Neuropathy
Optic: See Nerves, Optic
Robinson's for, 884—BI
NEUROBLASTOMA, intrathoracic, [Lee] 1247—ab
mediastinal, [Dolley & Brewer] ★1132
NEUROCIRCULATORY Asthenia: See Asthenia
NEURODERMATITIS, treatment, ultraviolet rays, [Council report] ★127
NEUROFIBROMA of foot, [Hauser] ★1217
NEUROLOGY, American Board of, (examinations) 273
American Board of Neurological Surgery, (examinations) 273
Bulletin of Los Angeles Society dedicated to Dr. Ingham, 774
Latin American Academy of, (first congress) 1103
patient load of physicians, [Ciocco & Altman] ★509; ★510; ★512
NEUROMA, persistent ulnar nerve pain after contusion, 382
NEUROPATHY, diabetic, vitamin B_1 therapy, [Needles] ★914
in prostate cancer, effect of diethylstilbestrol, [Clarke & Vlets] ★199; (correction) 694
induced thiamine deficiency, [Williams] 1111—ab
multiple; iron also yeast for, [Moore & others] ★245
peripheral, from sulfapyridine, sulfathiazole, sulfadiazine, [Dowling & Lepper] ★1190
peripheral vasoneuropathy after chilling, [Ungley] 218—ab
NEUROPSYCHIATRY: See also Psychiatry
Central Association meeting canceled, 1103
discussion in selecting armed forces, 876
military, school of, 265; 1154—E; [Halloran & Farrell] ★1159
Pan American Week, 450
NEUROPSYCHOSIS: See Psychoneurosis
NEUROSARCOMA, mediastinal, [Dolley & Brewer] ★1132
NEUROSIS: See also Psychoneurosis; Vasomotor System
Cardiac: See Asthenia, neurocirculatory
NEUROSIS—Continued
more or less continuously bored, 655—ab
war, Association for Advancement of Psychoanalysis views on, [Trippe] 80—ab
war, inpatient treatment, [Maclay] 156—ab
NEUROSKELETAL system of older worker, [Carlson] ★807
NEUROSYPHILIS, high incidence in criminals, Brazil, 366
NEUTRALIZATION test in encephalitis, [Hammon] ★560
NEUTRON Rays: See Cyclotron
NEUTROPENIA: See Agranulocytosis, Acute
NEVUS pigmentosus, prophylactic treatment, [Driver & MacVicar] ★416
treatment, ultraviolet rays, (Council report) ★129
NEW AND NONOFFICIAL REMEDIES: See American Medical Association; under names of specific drugs as Acid, ascorbic, N.N.R.; Diethylstilbestrol, N.N.R.
NEW JERSEY, Academy of Medicine: See Academy
NEW ORLEANS Graduate Medical Assembly, 7th annual, 691
NEW YORK: See also Brooklyn
Academy of Medicine, (Friday afternoon lectures) 60; (Inter-American Division and International Society of Surgery reorganization) 62; (anniversary discourse) 271; (Vesalius celebration) 699; (centennial of Holmes' paper on puerperal fever) 692; (inhalational therapy) ★753; (committee recommends oleomargarine) 1102
Associated Hospital Service, 140; 1099—OS
Community Service Society of, (new health committee) 609
Heart Association committee on cardiovascular diseases in industry, 1404
Rheumatism Association organized, 532
standards to safeguard use of human blood products for transfusion, 876; 947—E
Zoological Society research center in park, 877
NEWBORN: See Infants, Newborn
NEWBURGH test after nephrectomy, [Kretschmer] ★177
NEWSPAPERS: See also Journals
A. M. A. press relations, 1367—OS
NIACIN: See Acid, nicotinic
NICKEL, black dermographism from, [Urbach & Pillsbury] ★185
NICOTINE: See Acid, nicotinic; Tobacco
NIEMANN-PICK Disease, lipid metabolism disorder, [Davison] 290—ab
NIKETHAMIDE, N.N.R. (Lakeside) 945; (Abbott); Drug Products: Smith-Dorsey) 1008
NITROGEN, loss, postoperative, 346—E
metabolism, amino acids to maintain, [Altshuler & others] ★163; 765—E
oxides of, industrial hazard, [McGee] 852—ab
NITROGLYCERIN: See Glyceryl Trinitrate
NITROTOLUENE (*di*, also *tri*), industrial hazard, [McGee] 852—ab
tri, poisoning in rats, effect of diet, [Himsworth] 1311—ab
NOCTURIA: See Urination, frequent
NOISE Abatement Council (achievement awards for 1943) 612
ear stopper (plastic mold) to conserve hearing in workers, [McCoy] ★1330
NOMENCLATURE: See Terminology
NORTH AFRICA: See World War II, Africa
NORTH CAROLINA Academy of Public Health organized, 610
University of: See University
NORTHWESTERN University, (course on chemical warfare, medical aspects) 685
NOSE: See also Otolaryngology
Accessory Sinuses: See Sinusitis, Nasal
Colds: See Colds; Rhinitis
disease, sulfadiazine spray, gramicidin (tyrothricin) and penicillin, [Bordley] 978—ab
Edema: See Rhinophyma
intranasal insulin administration, 382
intranasal vaccination against colds: N-V Nasal, 471
intranasal vitamin instillation in colds, [Vidal Freyre] 1417—ab
septum, submucous resection for bullet in sphenoid sinus, [Futch] ★580
symptoms in cold allergy, 713
tumor, adamantinoma, [de Juan] 709—ab
ulcer, causing destruction of; controlled, [Costello] ★36
NO-WHEEZ Cough Syrup, 884—BI
for Asthma, 783—BI
NU HAIR Products, 146—BI
NU SIGMA NU (medal to Dr. Matas) 775
NUFFIELD (Lord) gives 40 million for health foundation, 777
Provincial Hospitals Fund: surveys of hospital services, 64
NURSERY: See also Hospitals, nursery day, health codes, N. Y., 692
NURSES, graduate, resurvey of, 141
in industry, outline of procedure for, A.M.A. Council discusses, 1230—OS
in 38 procurement service offices, 1097
male, police want Robert E. White, 1236
new uniform, London Hospital, 64
registered, new motion picture on, sponsored by American College of Surgeons, 204
NURSES—Continued
registered, work in a community, OWI release, 1163
student corps proposed, 768
student, number admitted to nursing schools, 1227
student, scarlet fever, immunization, 985
supply (shortage), use intensively trained volunteers, [McCook] 538—C
tuberculosis, danger of contracting in sanatoriums, 296
wanted for civilian needs, 602
War Service: See Medicine and the War, nurses
NURSING personnel in hospitals, ★1020
practice act amended, N. Y., 1379—OS
schools accredited by state boards, ★1010; ★1019; ★1020
War Service: See Medicine and the War, nursing
NUTRITION: See also Diet; Food; Infants, feeding; Vitamins
A. M. A. Cooperative Committee on Nutrition in Industry, 1369—OS
A. M. A. Council on Foods and Nutrition: See American Medical Association
Americans do not eat wisely says Gallup poll, 693
amino acids role in, 765—E
Bureau of Human Nutrition, (Dr. Sherman heads) 1236
Deficiency: See also Vitamins deficiencies; under specific vitamins as Vitamin B Complex
deficiency and liver dysfunction, [Portis] ★733; (discussion) 737
deficiency and resistance to infection, [Wilson] 1411—ab
deficiency and starch eating, 1250
deficiency anemias of malnutrition, [Trowell] 1416—ab
deficiency of diet in phosphorus, calcium, vitamin D, [Hinglais] 1417—ab
deficiency of ordinary diet in calcium more than other chemical, 559—ab
exhibit at Wright Field, 1224
Foundation, Inc., (activities) 1171; (advisory committee) 1298
HANDBOOK OF NUTRITION: (Introduction) [McLester] 119; ★945; (role of fat in diet) [Bloor] ★1018; (calories) [Du Bois & Chambers] ★1183; (water and salt requirements) [Talbott] ★1418; (principal mineral elements) [Macy] 120; ★34; (proteins) [Lewis] ★198; (iron) [Heath] ★396; (unusual foods of high nutritive value) [Wilder & Keys] ★529; (trace elements) [Shils & McCollum] ★609; (foods of plant origin) [Maynard] ★692; (preservation of nutritive value of foods in processing) [Kohman] ★831; (feeding healthy infants and children) [Jeans] ★913; (fat soluble vitamins) [Butt] ★1030; (water soluble vitamins) [Elvehjem] ★1388; (feeding the aged) [Truby] ★1422; (nutritive requirements in pregnancy and lactation) [Ebbs] ★339; (iodine in nutrition) [Curtis & Fertman] ★423; (medical evaluation of nutritional status) [Kraus] ★1406; (adequacy of American diets) [Stiebeling] ★831
in Wartime: See Medicine and the War, nutrition; World War II, nutrition
Industrial Aspect: See Industrial Health, nutrition
Iodine in, [Curtis & Fertman] ★423
Laboratory at Carnegie Institute, (Dr. Carpenter director) 446
malnutrition, prevalence, [Kruse] ★676
national program, (Canada) 777; (dept., Paraguay) 1103
status, evaluation in Madrid, [Robinson] 789—ab
undernourishment, tuberculosis increase in Belgium from, 534
value of enriched white flour, [Williams & others] ★943
vitamin C, in Royal Navy, [McNee] 546—ab
NU-VIG-OR Laxative-Tonic, 699—BI
N-V Nasal: intranasal vaccination against colds, 471
NYLON surgical sutures, 1292
ureteral catheter (Manalan) for continuous caudal analgesia, [McCormick] 700—C
NYSTAGMUS as recessive character, [Käser] 793—ab

O

O'D EASYLAX, 538—BI
OBERLIN (Thomas) Award: See Prizes
OBESITY: See also Dystrophy, adiposogenital; Medicolegal Abstracts at end of letter M
creatinine excretion in women and, [Tager] 542—ab
hepatic fatty acid and, [Ravdin & others] ★323
in infant, hormonal therapy, 898
prepuberal, or pseudo-Fröhlich syndrome in boys, [Schonfeld] ★177
treatment, amphetamine, 796
treatment, Marmola dangerous, court decision; physicians' testimony, 1286—E
OBITUARIES: See List of Deaths at end of letter D

OBSTETRICS: See also Abortion; Cesarean Section; Labor; Midwives
American Association of Obstetricians, (competition for obstetrics prize) 448
American Board of, (examinations) 62; 693
Anesthesia in: See Anesthesia
diethylstilbestrol value in, [Abarbanel & others] ★1123
patient load of physicians, [Ciocco & Altman] ★509; ★516; ★512
recommendations for women in industry, (A. M. A. Section Committee report) [Hesseltine & others] ★800
OCCUPATIONAL Dermatoses: See Industrial Dermatoses
Disease: See Industrial Diseases
therapists, number in all hospitals, 1942, ★1020
therapy, A. M. A. Manual, [Coulter] 866—ab; 1370—OS
therapy, "Arts in Therapy" exhibit, 692
therapy in rehabilitation, [Coulter] 866—ab
therapy technicians, schools for, approved by A. M. A., 776—OS; ★1086; 1398—OS
OCHRONOSIS, first British case and Pope's report in 1906, [Twyman] 784—C; [Smith] 1304—C
of sclera and cornea complicating alkaptonuria: refutation, [Steele] 700—C
OCTIN, antispasmodic action on colon, [Atkinson & others] ★648
OCULAR Symptoms; Tests, etc.: See Eyes; Vision
ODOR of horses, sensitivity to, [Hartmann] 88—ab
prevention: deodorant for sickrooms, 1116
OFFICE Hours: See Physicians
of Civilian Defense: See Medicine and the War
of Price Administration request women's work clothes standardized, 1171
of Procurement and Assignment of Physicians: See Medicine and the War
of War Information: See Medicine and the War
OFFICERS: See American Medical Association; Medicine and the War
OHIO: See also Cleveland
State University, (physical medicine dept.) 364; (Dr. Baker acting dean) 610
OIDIUM Albicans: See Monilliasis
OIL: See also Cod Liver Oil; Fat; Lipids
cutting, dermatitis from; use Steridol no. 3, 223
effect on hair growth, 1116
fuel, rationing Neponsit Beach Hospital closed to conserve, N. Y. C., 203
injections, tumors after [Conrad & others] ★237
Iodized: See Iodized Oil
Klorseptic Oil, 699—BI
of coconut, bactericidal and bacteriostatic action, [Hoyt] 465—ab
rash from bubble bath due to? 1250
OINTMENT: See also Chlorophyll; Cod Liver Oil; Sulfonamide Compounds
Klorseptic Ointment, 699—BI
protective, for sunlight, (Council report) ★513; ★514
West Protective No. 88 for erythema from welding, 162; (correction) 365
OLD AGE: See also Physicians, veteran
blood pressure and, [Howell] 545—ab; [Master & others] ★1251
feeding the aged, [Tuohy] ★42
diabetes mellitus in, 1004—ab
institution inmates in 1940, 1354—E
older worker (those past 50 or 60), [Tuohy] ★42; [Carlson] ★806
operations after 65, [Tuohy] ★48
tuberculosis in, 32—ab
vulvovaginitis also pruritus, treatment, [Abarbanel & others] ★1124; ★1125
OLEOMARGARINE, New York Academy recommends, 1102
nutritional values, Council report, 1370—OS
Wilson's, 677
de OLIVEIRA, OLINTO, honored, 366
OLLIER'S Disease: See Dyschondroplasia
OMENTOPEXY (Talwa-Morrison) in portal cirrhosis, [Greene] ★719
OMENTUM anastomoses for cardiac ischemia, [Kiriliov] 710—ab
OPERATIONS: See Surgery; under names of specific organs and diseases
Wounds: See Wounds, surgical
OPHTHALMIA, gonorrheal: See Conjunctivitis, gonococcic
OPHTHALMOLOGISTS to return portion of fees to those in service, St. Louis, 532
OPHTHALMOLOGY: See also Blindness; Eyes; Glasses; Vision; etc.
A. M. A. Council on Physical Therapy committee on ophthalmic devices, 1371—OS
American Board of, (examinations) 693
Charles collection on, Mo., 203
Ophthalmological Society, annual congress, England, 1172
Pan American Congress, 878
patient load of physicians, [Ciocco & Altman] ★509; ★516; ★512
OPIUM: See also Morphine
poppy, growth in U. S., federal legislation, 444—OS
OPSONOCYTOPHAGIC Index of brucellosis, [Borts & others] ★319
OPTIC Atrophy: See Nerves, optic
OPTOMETRIST, Lepper's alleged cure of color blindness, 948—E
ORAL CAVITY: See Mouth
ORANGE juice (concentrated), for expectant mothers and young children, 207
juice, Domino and Sunseald Brands, 677
ORATIONS: See Lectures
ORCHESTRA: See Physicians avocations
ORCHIDS, germination, coconut water for, [Picado T.] 295—ab
ORCHIECTOMY: See Castration; Testis, excision
ORDER of the Purple Heart: See World War II
ORGANIZED Medicine: See American Medical Association; Societies, Medical
ORGANOGRAPHY: See Roentgenography
ORIENT: See China
ORR, WINNETT, plaster technic for wounds, 1143—ab
ORTHOPEDICS, British Association cooperates with rheumatism council, 963
Cummings Foundation and Detroit Clinic merge, 139
field clinics, Wis., 776
Hospital: See Hospitals
impairment, fitting handicapped to jobs, 681—E; [Bartle] ★1002
surgeons, American Academy of, (Clinical Orthopaedic Society joint meeting) 141; (elections) 611
surgery, American Board of, (revises by-laws) 961
ORTHOPSYCHIATRY, American Association meeting, 448
ORTHOPTICS, examinations by American Council, 878
ORTHO-TRONIC Audiphone, Western Electric, 1283
OSLER-Vaquez Disease: See Polycythemia vera
OSSIFICATION: See Calcification (cross reference)
OSTEITIS deformans (Paget's) relation to hyperthyroidism, [Lyon] 294—ab
OSTEOMA, osteochondroma, etc. of chest wall, [Dolley & Brewer] ★1135
OSTEOMYELITIS, rheumatic fever diagnosed as, [Hansen] ★987
OSTEOPATHS as interns in Army hospitals, federal legislation on, 444—OS
deferment, by Selective Service, 133
practice acts, state legislation, Bureau report, 1378—OS
OSTEOPOROSIS, post-traumatic: Sudeck's atrophy, [Miller] 81—ab
OTITIS MEDIA, meningitis, before and after sulfonamide era, [Williams] 462—ab
OTOLARYNGOLOGY, American Board of, (examinations) 448
course at Indiana, 1100
sulfadiazine, gramicidin, penicillin locally in, [Bordley] 978—ab
OTO-OPHTHALMOLOGICAL Pacific Coast Society, meeting canceled, 1103
OTORHINOLARYNGOLOGY, American Laryngological, Rhinological and Otological Society, 141
patient load of physicians, [Ciocco & Altman] ★509; ★516; ★512
refresher course at Illinois, 690
OVARIOTOMY, first, performed by Dr. McDowell: Jane Todd Crawford Day, 202
OVARY: See also Corpus Luteum
function in lactation amenorrhea, [Topkins] 1414—ab
insufficiency, estradiol and testosterone affect, [Knowlton] 542—ab
insufficiency, gonadotropins (serum vs. chorionic) for, [Rydberg & Pedersen-Bjergaard] ★1117
insufficiency, syndrome with decreased stature, [Albright] 786—ab
tumor, probable neoplasm, 381; (reply: cervical polyp?) [Berry] 1186
OVERWEIGHT: See Obesity
OVIDUCTS, inflammation (acute) sulfanilamide and sulfathiazole for, [Barrows] 1414—ab
OVUM: See Embryo
OXYGEN Carbon Dioxide Mixture: See Carbon Dioxide mixture
deficiency, acclimatization to discontinuous anoxia, [Stickney] 76—ab
deficiency at high altitudes, [Lenggenhager] 294—ab
effect, shock delaying action of barbiturates, [Beecher] 372—ab
helium hood, New York Academy report, ★758
intake and debt vs. exercise and fatigue in disease, 1093—E
myelography (two needle) for visualizing subarachnoid space, [Munro] 464—ab
Quotient: See Metabolism, basal
Therapy: See also Pneumoperitoneum; Pneumothorax Artificial (cross reference)
therapy for hypotension in spinal anesthesia, [Papper & others] ★27
therapy (inhalational) effect on erythrocytes in anemia, [Reinhard] 1245—ab
therapy (inhalational) standards, New York Academy report, ★755
OXYURIASIS, Enterobius vermicularis in appendix, [Schenken] 151—ab
in children, Scotch tape diagnostic technic, [Jacobs] 78—ab
OZENA: See Rhinitis, atrophic

P

P factor, urea resensitization of sulfonamide fast bacteria, 680—E
PACIFIC area (southwest), medical inspection, 56
Coast Oto-Ophthalmological Society meeting canceled, 1103
War: See World War II
PAIN: See also Abdomen symptoms; Backache; Headache; Muscles pain; Sciatica
costovertebral (left): renal colic or diaphragmatic pleurisy? 629
new disease entity? [Bowdoin] 889—ab
Precordial: See also Angina Pectoris; Arteries, coronary occlusion; Thrombosis, coronary
precordial (severe) in sudden collapse, cause of? 471
Relief of: See also Anesthesia
relief of, B-D-Mint Powders, 280—BI
relief of, cobra venom for analgesia, 1186
relief of, demerol for, [Hecht] 1307—ab
relief of, histamine for, from gunshot wounds of nerves; [Rusetskiy] 710—ab
relief of, mesencephalic tractotomy, [Walker] 458—ab
thiamine action on; Russian All Union Institute discusses, 436; 521
PALESTINE, (epidemic diseases, fight against) 779; (health report) 779; (Microbiological Society of) 1105; (branch of Association for French Medical Science in Middle East) 1105; (diphtheria outbreak) [Cameron] 1248—ab
PALEY'S (Mrs.) Baby Foods, 677
PAN AMERICAN: See also Inter-American; Latin American
American Congress of Endocrinology, (3rd) 450; (meeting postponed) 1103
Congress of Ophthalmology, 878
Neuropsychiatric Week, 450
Sanitary Bureau Committee for typhus and rickettsial diseases) 612
PANCREAS: See also Diabetes Mellitus
cancer, serum lipase test; [Johnson] 1177—ab
digest of, inject intravenously to counteract postoperative nitrogen loss, 346—E
Inflammation: See Pancreatitis
secretion, hyperinsulinism from continued vagal stimulation; atropine injection relieves, [Portis & Zitman] ★569
PANCREATITIS, serum lipase test, [Johnson] 1177—ab
PANDICULATOR, 537—BI
PANMYELOPHTHISIS: See Bone Marrow
PANTOPON, antispasmodic action on colon, [Atkinson & others] ★649
PAPAVERINE and blood circulation time, [Elek] 888—ab
hydrochloride, antispasmodic action on colon, [Atkinson & others] ★649
PAPER: See also under Journals
rationing and cost in A.M.A. journals, 1363—OS; 1394—OS; 1398—OS
tissue, cod liver oil ointment dressing for burns, [Callahan] 541—ab
PAPILLEDEMA: See Nerves, optic
PAPILLOMA, virus, of oral lining, 1353—E
PARA-AMINOBENZOIC Acid: See Acid, p-aminobenzoic
PARACHUTE, physician parachutist (Lieut. Rob) awarded Military Cross, 768
PARAFFIN-sulfanilamide treatment of burns, 300
PARALDEHYDE, 2 fatalities from, [Burstein] ★187; (reply: its safety and value as hypnotic) [Miller] 783—C; (reply) [Burstein] 1241—C
sciatic nerve injury from intramuscular injury, [Woodson] ★1343
PARALYSIS agitans: See Parkinsonism
facial, from neurinoma, [Roberts] 1310—ab
Infantile: See Poliomyelitis
of obturator nerve after injecting hemorrhoids, 1315
PARAPSORIASIS, treatment, ultraviolet rays (Council report) ★128
PARASITE: See also Fetus, parasitic; Fungi
Intestinal: See Intestines, parasites
specimens, Distributing Center for, response to requests, 1171
PARASYMPATHETIC: See Nervous System, Sympathetic
PARATHYROID, vitamin D and A. T. 10, 518—E
PARATYPHOID A, refractory infection of liver and bile duct, 1315
B, water borne outbreak, [Jones] 84—ab
PARENTHOOD, Planned: See Birth Control
PARENTS, study similarities to children, Germany, 1360
PARISIAN Style Saje, 884—BI
PARKE, Davis and Co., Army-Navy E to, 953
PARKINSONISM, whistle-smile reflex in, [Hanes] ★1152
PARTURITION: See Labor
PASTEURIZATION: See Milk

PATELLA cubiti, role of knee trauma, [Habbe] 74—ab
PATHOLOGISTS, American Association of, cancel meeting, 418
clinical, American Society of, registry of technicians, [Holmblad] *821; *822
PATHOLOGY, American Board of, (new trustees), 141
collection of war injuries at Royal College of Surgeons, 695
Philadelphia coroner (Dr. Goddard) organizes classes at the morgue, 1222—E
PATIENTS: See also Disease: Hospitals; Medical Service; Surgery; under names of specific disease
feeding under Swiss food rationing, 1237
invalid diets and food rationing: OPA ration order 13, 1157—E
number seen per week by private practitioner, [Clocco & Altman] *506; [Frame] 1109—C
Record: See Medical Record
role in delay in treatment of cancer, [Harms & others] *335
Transport of: See Ambulances; Stretcher
PECK, SOPHIA, abortionist sentenced, 271
PECTIN, effect on blood coagulation in thrombocytopenia, [Isaacs] 1306—ab
solution in shock, [Hartman & others] *1337
PEDIATRICS: See also Children; Infants
American Academy of (opens membership to Latin Americans) 62; (medical standards for physicians in public schools) 619
Georgia Society meeting, 59
patient load of physicians, [Clocco & Altman] *509; *510; *512
Revista Peruana de Pediatria, 205
Swiss Society of, 1237
PEDICULI: See Lice
PEDIMOLL, 783—BI
PELLAGRA, Casal's disease, (roentgen behavior of stomach in), [Díaz-Rubio] 86—ab; (constitution in) 296—ab
in adults, Chile, [Alessandri] 220—ab
nutritional status, [Kruse] *589
treatment, J. W. Dorman, 369—BI
PELVIS, conformation, sex difference in development, [Morton] 283—ab
inflammation, etiologic role in hypertension, [Everett] 787—ab
inflammation, local heating (Elliott, short wave diathermy) [Upton & Benson] *38
irradiation during pregnancy, microcephaly after, 54—E
thrombophlebitis, ligate vena cava and ovarian veins for, [Collins] 1179—ab
PEMPHIGUS foliaceus (wild fire), Brazil, 276
treatment, ultraviolet, (Council report) *129
PENICILLIN, anti-infective agent, [Smith] 851—ab
in Clostridium welchi infection, [McIntosh] 1181—ab
spray in otolaryngology, [Bordley] 978—ab
PENNSYLVANIA: See also Philadelphia
statewide basis of pneumonia treatment, [Bortz] *107
University of: See University
PENSIONS for war injuries, England, 275
fund for physicians, Cuba, 1298
PENTOTHAL SODIUM, Anesthesia: See Anesthesia
N. N. R., (Abbott) 593
PEPSIN chewing gum and stomach ulcer, 713
PEPTIC ULCER, duodenal, acid factor in, [Berk] 215—ab
duodenal, etiology, treatment, [Somervell] 981—ab
duodenal; mild hyperbilirubinemia in, [Johnson & Bockus] *729 (discussion) 737
etiology: cigaret smoking, acidity, vasoneurosis emotion; etc., [Boles] *640
gastric and duodenal, in Australia, [Cleland] 466—ab
gastric, and pepsin chewing gum, 713
gastric mucosa, "gastritis" and, [Wolf] 1177—ab
in Royal Navy, [Wade] 792—ab
increase in wartime, [Boles] *640
perforated, anesthesia at Massachusetts General, [Beecher] *902
perforation, acute gastric, [García Barón] 293—ab
surgical treatment, antral resection vs. partial fundusectomy, [Connell] 454—C
surgical treatment, jejunal ulcers after gastrectomy, [Nissen] 147—C
surgical treatment vs. medical, [Boles] *640
treatment, continuous drip, for gastroduodenal, 897
treatment, high protein beverage (milk, dryco, egg white), [Bauman & Gage] *1283
treatment histidine and mucus secretion in: Lenormand theory, 381
treatment, kaolin-alumina gel, [Neuwelt] 542—ab
PERDIZ, Vitalex, 884—BI
PERFORATION: See Intestines; Peptic Ulcer; Stomach
PERFUME: See Berlock Dermatitis
PERICARDITIS, constrictive, chronic, [Harrison] 286—ab
in infants, [Kreutzer] 1312—ab
PERINEPHRITIS, clinical: effect on blood pressure, [Braasch] 79—ab
PERIODICALS: See Journals
PERIOSTEUM, plated osteoperiosteal graft, [McBride] *652
PERITONEUM: See also Pneumoperitoneum
cavity, talcum in, from surgeon's gloves; granuloma resulting, [Seelig] 1304—C
Sulfonamides Implanted in: See Abdomen
PERMANENTE Foundation, Kaiser's, 595—E
PERNICIOUS Anemia: See Anemia, Pernicious
Inertia: See Fatigue
PERNIO: See also Chilblains
difference in tissue changes from heat vs. cold, 91
PEROXIDE: See Zinc Peroxide
PERRY-LEWIS Test: See Capillaries
PERSONALITY, complete change, after blast injuries, [Abbott & others] *664; *739
changes after testosterone in eunuchoidism, [Kasanin & Biskind] *1317
PERSPIRATION: See Sweat
PERTUSSIS: See Whooping Cough
PESTS in stomachs of birds, 573—ab
PETERSON, JOHN H., awarded Silver Star Medal, 266
PETIT MAL: See Epilepsy
PETRODINE, 699—BI
PETROLEUM PRODUCTS: See Benzene; Paraffin; etc.
PHARMACEUTICALS: See also Drugs; Pharmacology; Pharmacopeia; etc.
American Pharmaceutical Manufacturers' Association award to Dr. Doisy, 273; 435—E
medical cooperation, (Council discusses) 839
National Quinine Board pool at American Pharmaceutical Association headquarters, 434—E; 842—E.
PHARMACISTS: See also Medicolegal Abstracts at end of letter M
number in all hospitals, *1020
PHARMACOLOGY institute for Mount Scopus, 1161
PHARMACOPEIA: See also Formulary
British, (names of drugs) 206
U. S., include in N. N. R., drugs which have become official? (Council discusses) 839
U. S. XV: Fifth Decennial for shipping (bulk ether) 948—E; (conference to consider additions) 1298
PHARMACY, A. M. A. Council on: See American Medical Association
corps in U. S. Army, legislation on, (Bureau report) 1380—OS
drug stores close earlier, Philadelphia, 1405
hospital, [Smith] *1003
Philadelphia College of, begins accelerated courses, 610
PHARYNGITIS complicating epidemic pleurodynia, [Howard & others] *925
PHARYNX, ports of entry of poliomyelitis: 340—E
PHEMEROL, film treatment of burns, [Sklinner] 1178—ab
PHENOLS, halogenized, chemotherapeutic use, 779
PHENYTOIN SODIUM: See Diphenylhydantoin Sodium
PHEOCHROMOCYTOMA of adrenal medulla; epinephrine shock sign, [Engel] 786—ab
PHILADELPHIA, Associated Hospital Service of, (annual report) 610; (correction) 777
College of Pharmacy and Science begins accelerated courses, 610
coroner, innovations by Dr. Goddard, 1222—E; 1367—OS
County Medical Society, (Commission of Physicians' Health disbands; annual graduate institute) 1235
PHILLIPS, ARTHUR OSBORNE, placed on probation, 59
PHIPPS Institute laboratories, (Dr. Opie temporary director), 488
PHLEBITIS: See also Thrombophlebitis
subjacent cause of stasis dermatitis? 1419
PHLEBOTHROMBOSIS: See Thrombosis, venous
PHLEGMASIA alba dolens, treatment, [Evans] 623—ab
PHONOELECTROCARDIOSCOPE, Donovan invents, 778
PHOSPHATASE in Blood: See Blood
PHOSPHATE: See also Adenylpyrophosphate; Potassium phosphate
clearance, vitamin D and dihydrotachysterol, 518—E
metabolism and sugar absorption in rickets; relation to vitamin D, [Laszt] 626—ab
sodium-beta-glycerol-phosphate effect on healing of fracture, [Sperling] 76—ab
PHOSPHORUS burns, treatment, (correction) 205
diet deficient in, [Hinglais] 1417—ab
diet for pregnant and lactating women, [Ebbs] *341
in Urine: See Urine
radioactive, therapeutic use, 54—E; [Low-Beer] 706—ab
radioactive, treatment of lymphosarcoma, [Kenney] 706—ab
Treatment: See Hyperthyroidism; Phosphorus, radioactive
PHOTODYNAMIC or optical sensitization: pathology, (Council report) *515
PHOTOGRAPHY: See also Moving Pictures
for identifying human remains in murder trial, 207
pictures taken of all prospective employees, [Wishard] *811; (discussion) 863—ab
PHOTOSENSITIVITY: See Light, sensitivity
PHOTOSYNTHESIS: See Chlorophyll
PHYSICAL DEFECTS: See also Crippled; Disability; Handicapped; Rehabilitation
in industrial trainees, [Sawyer] 854—ab
list which disqualifies for military service, 950
PHYSICAL EDUCATION: See Athletics; Exercise
PHYSICAL EXAMINATIONS: See Medicolegal Abstracts at end of letter M
Industrial: See Industrial Health
of Children: See Children
of Recruits: See Medicine and the War, physical examination
PHYSICAL EXERCISE: See Exercise
PHYSICAL FITNESS: See Physical Defects
PHYSICAL MEDICINE, Ohio State U. creates dept., 364
PHYSICAL THERAPY: See also Cyclotron; Diathermy; Radium; Roentgen Therapy; Ultraviolet Rays; etc.; under names of specific diseases and organs
aides, corps authorized, 199
A. M. A. Council on: See American Medical Association
A. M. A. Manual, [Coulter] 866—ab; 1370—OS
equipment under strict control, 685
in rehabilitation, [Coulter] 866—ab
technicians, number in hospitals, 1942, *1020
technicians, schools for, approved by A. M. A., 770—OS; *1087; 1398—OS
PHYSICALLY HANDICAPPED: See Handicapped
PHYSICIANS: See also Medical Jurisprudence; Medical Service; Surgeons; etc.
age of, attending meetings, N. Y., 60
Alien: See Physicians, foreign
A. M. A. JOURNAL, percentage of doctors receiving, 1365—OS
American, Britain thanks them for their aid, 57
American College of Chest Physicians (postpones meeting), 776
American College of, (plan "teams" for camp hospitals) 1357 (course on internal medicine) 1101; (cooperates in training physicians in and out of armed forces) 1228—OS; 1399—OS
Association of American Physicians meeting canceled, 1236
average doctor, 313—ab
avocations, orchestra: Doctors Musical Society, Brooklyn, 1234
Awards to: See Prizes
"Be Kind to Doctors Week," Portland, Oregon, 418
California Physicians' Service and Kaiser's Permanente Foundation, 595—E
census, (Bureau report) 1384—OS
civilian, to be employed by Army for service in war plants, 437
color blindness of, and military service, 1315
Commissions (Military): See Medicine and the War
cooperation, National Nursing Council for War Service needs, 842—E
Courses for: See Education, Medical, graduate
Deaths: See also Deaths at end of letter D
deaths in 1942, 195—E
diet deficient in vitamin B effect on, [Egana] 371—ab
Directory of: See American Medical Directory
Doctors Day, (Georgia) 446; (Ky.) 1169
"Doctors in Khaki," movie made at Carlisle Barracks, 766
Doctors' War Fund to provide $100 monthly to families of those in service, 1101
Education of: See Education, Medical
Emigre: See Physicians, foreign
Fees: See Fees
Fellowships: See Fellowships
"Flying": See Aviation
foreign, aliens eligible for city positions, Chicago, 202
foreign, Erie County (N. Y.) Society votes to bar, 1234
foreign, Polish military and refugee physicians conference in Tel-Aviv, 1105
foreign, test case ruling affects applicants for examination, Illinois, 690
foreign, urge speedy naturalization, 365
Graduate Work: See Education, Medical
health, Commission of, disbanded, Philadelphia, 1235
health of 8,884, England, [Gosse] 625—ab
Heroes: See World War II, heroes
heritage of courage and kindness, 1276—ab
high degrees of personal liberty among, 244—ab
Hospital: See Hospitals
in Germany, status, 1360
in Industrial Practice: See Industrial Health
in politics, (Dr. Miller Nebraska congressman) 140; (deaths of those in politics) 196—E; (legislators, Idaho) 774
Income: See Fees; Tax, income
Industrial: See Industrial Health
Lectures honoring: See Lectures
Licensing: See Licensure
Medals for: See Prizes
Military Service: See Medicine and the War; World War II

PHYSICIANS—Continued
Mobilization: See Medicine and the War, Procurement and Assignment
monuments to, memorial window at Randolph Field chapel (illustration) 846
Negro: See Negroes
office hours, average number per day and week, [Ciocco & Altman] *511; [Frame] 1109—C
Office of Procurement and Assignment of: See Medicine and the War
pension fund for, Cuba, 1298
Portraits: See Portraits (cross reference)
positions open, (psychiatrist, Calif.) 530; (assistant medical director and supt. Calif.) 690; (state health officer, needed Del.) 690
practice, the greatest joy, 176—ab
practice (private), statistics on patient load, [Ciocco & Altman] *506; [Frame] 1109—C
practicing, called to military service, part of fees returned to, St. Louis, 532
practicing, continuation courses for, *967
practicing, need for general practitioners; OWI release, 1163
practicing under Hitler's rule, 686; (pay yearly subscription of 100 kroner) 847
Prisoners of War: See Prisoners
Privileged Communications: See Privileged Communications
Prizes for: See Prizes
"Processing": See Medicine and the War
Procurement and Assignment: See Medicine and the War
quinine supplies, release for National Quinine Pool 434—E; 542—E; 845
Recruiting: See Medicine and the War, Procurement and Assignment Service
Refugee: See Physicians, foreign
relocation of, 1161; (in U. S. vs. England) 1162; (Bureau report) 1375—OS
Residencies; Resident: See Residencies; Resident
Royal College of, (elections) 365; (housing schemes; postwar planning) 962
School: See Schools
ships named after famous medical men from Johns Hopkins, 1358
Specialization by: See Specialists; Specialties
supply, death rate and shortage of, unscientific Science Service, 132—E
supply, distribution and movement, analyze DIRECTORY 1923-1938, 445—OS
supply, distribution by states in DIRECTORY, 1361—OS
supply needed as replacements in civilian service, 132—E; 1160
supply, needed, Los Angeles, 270
supply, OWI release, 1158—E; *1160
supply, ratio of 1 physician to 3,000 population, 135
supply, study needs in Washington, D. C., 139
"teams," for camp hospitals, A. M. A., A. C. P., and A. C. S. plan, 135
Testimony: See Evidence; Medicolegal Abstracts at end of letter M
veteran: (Dr. Newman 94th birthday) 609; (Dr. King 90th birthday) 690
Victory Tax Returns: See Tax
War Service: See Medicine and the War; World War II
Women: See also Students, Medical, women
women, contract surgeons wanted at army operated industrial plants and depots, 1095
women, coronor: Dr. Wallace, Canada, 205
women, first Canadian graduate: Dr. Gullen, 1236
women, in medical corps, legislation on, (Bureau report) 1379—OS
women, number of patients seen per week by, [Ciocco & Altman] *509; [Frame] 1109—C
women, 6 will graduate at Naval Medical Center, 1358
women, WAAC's need, [Lull] *640
PHYSIOLOGISTS, aviation, 683; 1096
PHYSIOLOGY, changes with age, vs. work and pay, [Carlson] *807; *809
PHYSIOTHERAPY: See Physical Therapy
PHYSIQUE: See Constitution
PICTURES: See Moving Pictures; Photography
PIGMENTATION: See Nevus pigmentosus; Skin; Spinal Cord
Loss of: See Leukoderma
PIGS: See Hogs
PILES: See Hemorrhoids
PILLOWS, allergen-proof encasings, 345
PILOTS: See Aviation
PIMPLES: See Acne
PINE-Orum Compound, 618—BI
"PINK EYE": See Conjunctivitis
PINWORM Infection: See Oxyuriasis
PIROGOFF, NICOLAI IVANOVITCH, great army surgeon, 1325—ab
PITTSBURGH AWARD: See Prizes
PITUITARY anterior, ketogenic diet stimulates, [Julesz] 219—ab
irradiate to control puberal bleeding affect offspring? [Kaplan] *1199
pharyngeal, relation to ozena, [Ruskin] 288—ab
posterior, solution, stimulates colon, [Atkinson & others] *648
stimulation role in ovarian syndrome with decreased stature, [Albright] 786—ab
PITUITARY—Continued
tumor destroys hypothalamus, [Collins] 287—ab
tumors, adenoma, roentgen therapy, [Kerr] 74—ab
PITYRIASIS rosea, ultraviolet rays for, (Council report) *1129
PLACENTA, permeability to whooping cough antibodies, [Cohen & Scadron] *656
tissue (retained) identification in uterus curettings, 382
PLAGUE, control, Palestine, 779
human case, Calif., 270
prevention under Hitler's rule, 524
rodent, spread of, and the war, [Geiger] 70—C
sylvatic, fumigate burrow openings to control, [Stewart] 283—ab
PLANES: See Aviation
PLANNED Parenthood: See Birth Control
PLANTS: See also Chlorophyll; Pectin; Pollens
hormones increased pathogenicity of basal rot fungus, 1284—E
PLASMA: See subheads under Blood; Blood Transfusion; Serum
PLASMOCHIN Treatment: See Malaria
PLASTER, Orr's Technic: See Wounds
PLASTIC mold (ear stopper), [McCoy] *1330
Surgery: See Surgery
PLATELETS: See Blood platelets; Purpura, thrombopenic
PLEURA, anatomy of left cavity, 223
reflex syncope "pleural shock" in pneumothorax, [Ormond] 790—ab
PLEURISY complicating epidemic pleurodynia, [Bell & others] *928
diaphragmatic; left costovertebral pain, 629
PLEURODYNIA, epidemic, in Brooklyn in 1942, [Howard & others] *925
PLOTZ Foundation: See Foundations
PLUMBISM: See Lead poisoning
PLYWOOD splint for arm or leg, [Parcher] 217—ab
PNEUMOCOCCUS, culture (blood) plus paraaminobenzoic acid, [Filippin & others] *235
infection, comparative activity of sulfonamides, [Marshall] 543—ab
Meningitis: See Meningitis
Pneumonia: See Pneumonia
septicemia, sulfonamides for, [Kanof & others] *13
study course, Iowa, 531
type specific serum, [Filippin & others] *235
PNEUMOCONIOSIS: See Pneumonoconiosis
PNEUMONIA: See also Bronchopneumonia
atypical, after colds, sulfonamides as preventive, 1185
atypical, convalescent, blood for, [Flexner] 1310—ab
atypical, death rate in armed forces, 762—E
atypical human, and feline virus, [Blake] 980—ab
atypical, now reportable, N. Y. City, 271
atypical (?) virus; etiologic role of cats and cotton rats, 197—E
control, Pennsylvania; role of county society in, [Donaldson] 113—ab
eosinophilic infiltration, [von Meyenburg] 626—ab
etiology, Micrococcus tetragenus, [Toblin] *41
in infants, 9 different forms in infancy, [Adams] 1244—ab
interstitial plasma cell, in infants, [Hug] 708—ab; [Stirnimann] 1312—ab
megakaryocytes hyperplasia in, [Williams] 457—ab
mortality, Pennsylvania, [Bortz] *109; *110
mortality, sulfapyridine; etc., effect on, [Filippin & others] *231; *232
pneumococcic, control, [Keefer] *805
pneumococcic, sulfonamides for, [Schwartz] 705—ab
sputum specimen not required to obtain sulfonamides, Illinois, 530
Treatment: See also Pneumonia, atypical
treatment at Fort Bragg, [Daniels] 236—ab
treatment, physiologically directed, [Barach] 287—ab
treatment, statewide basis, Pa., [Bortz] *107; [Donaldson] 113—ab
treatment, sulfonamide toxicity, fatal, [Sutliff & others] *307
treatment, sulfapyridine, sulfathiazole or sulfadiazine, [Filippin & others] *230
Virus: See Pneumonia, atypical
PNEUMONOCONIOSIS, asbestosis, electron microscopy in, [Kühn] 87—ab; (correction) 220
silicosis in Idaho mines, [Ellis] 890—ab
silicosis of intrathoracic lymph nodes, [Hagen] 87—ab; (correction) 220
PNEUMOPERITONEUM for chronic ulcerative colitis, [Neumann] 1416—ab
workmen's compensation for, England, 1105
PNEUMOTHORAX, ARTIFICIAL: See Tuberculosis, Pulmonary
PODOPHYLLUM, resin of, in olive oil for inguinal granuloma, [Tomskey] 79—ab
POISON Hemlock: See Hemlock poisoning
POISONING: See also Amphetamine sulfate; Lead; Sulfonamides; Medicolegal Abstracts at end of letter M
accidental, New York safeguards against, 60
cholesteremia in, [Llosa Ricketts] 793—ab
Food: See Botulism; Food
Industrial: See Industrial Diseases
POLIOMYELITIS, diagnosis or rheumatic fever, [Hansen] *987
epidemic, (in Germany) 200; 847; (Buenos Aires) 450
Georgia Warm Springs Foundation report, 1103
inhibition: Jungeblut-Sanders "inhibin"; research by Delbrueck, Luria, Andrewes, 194—E
National Foundation for Infantile Paralysis, (courses for training in Kenny Method) 271; (annual report) 449; (interest in National Conference on Planning for Postwar Medical Service) 764—E; 769—OS; 1094—E; (grant to Yale Study Unit) 1296
ports of entry: oropharynx vs. alimentary tract, 348—E
pregnancy complicated by, [Peelen] 1310—ab
President's Birthday Fund for, 272
prize for research by Rodolfo Fitte Foundation, 696
treatment, early immobilization vs. Kenny method, [Wright] 373—ab
treatment, Kenny, (lecture on technic, N. Y.) 60; (courses for training in, by National Foundation) 271; [Knapp] 373—ab; [Wright] 373—ab; (center opened, Jersey City) 447; (course for physicians, N. Y.) 877; (center, La.) 959
treatment, Retan technic of spinal drainage, [Retan] 71—C
virus, intracutaneous inoculation; detect in stools, [Trask] 623—ab
virus of, 1353—E
vitamin B_1 hypoimmunity, 1284—E
Yale Study Unit, 1296
POLISH Physicians: See World War II
POLITICS, Physicians in: See Politics
POLLENS allergy, Brazil, 276
POLYCLINIC: See Clinics
POLYCYTHEMIA, diagnosis, high red cell count and hemoglobin, 472
treatment, total body irradiation, [Medinger] 458—ab
vera, radioactive substances for, 54—E; [Low-Beer] 706—ab
POLYPEPTIDES, treatment of shock from hemorrhage, [Elman & Lischer] *498
POLYPOSIS, familial, of colon, [Friedell & Wakefield] *836
POLYURIA: See Diabetes Insipidus
PONTON Alphabetic Nomenclature used by hospitals, *1026
"POP": See Beverages, carbonated
POPE, FRANK M., report of first British case of ochronosis in 1906, [Twyman] 784—C; [Smith] 1304—C
POPPYSEED Oil, Iodized: See Iodized Oil
POPULATION: See also Census; Vital Statistics
percentage hospitalized and operated on, by states, *1009; *1018
PORK: See Hogs; Trichinosis
PORPHYRINS, use in wound healing, 1237
PORTAL VEIN circulation, gastrointestinal tract and liver, [Mann] *720; (discussion) 737
PORTER (Langley) Clinic: See Langley Porter
PORTIS Syndrome (cholecystohepato-hyperglycemic glycosuric) [Portis] *734
PORTRAITS: See under names of individuals as Barbour; Bodansky; Crile; etc.
POSTGRADUATE Work: See Education, Medical, graduate
POSTMORTEMS: See Autopsies
POSTOPERATIVE: See Surgery
POSTWAR Planning: See Medical Service, planning postwar; World War II, postwar
POTASSIUM arsenite solution effect on erythropoiesis, [Limarzi] 1245—ab
citric acid-lactose tablet to sterilize water, [Violle] 1182—ab
phosphate, give by clsternal puncture for shock, [Stern] 545—ab
potatoes and, 1263—ab
Thiocyanate: See Ureamine treatment
POTATOES and potassium, 1263—ab
consumption per capita, [Stiebeling] *836
POWDER: See Face powder
PRACTITIONER: See Physicians, practicing
PRECORDIA: See Pain, precordial
PREGNANCY: See also Fetus; Impregnation; Labor; Maternity; Obstetrics; Placenta; Puerperal Infection; Puerperium; etc.
Blood Serum from Pregnant Mares: See Gonadotropins, serum
Complications: See also Pregnancy, syphilis in
complications, chorea; vitamin B_6 for, [Rabin] 378—ab
complications, coronary occlusion, safe delivery, [Horwitz & others] *1342
complications, diabetes, indication for cesarean section? 1420
complications, poliomyelitis, [Peelen] 1310—ab
cytoplasmic modification of genetic trends, [Petersen & Mayne] *929
diagnosis, rapid frog test, [Weisman] 375—ab
diagnosis, use rabbits for food instead, [Weisman & Coates] 1109—C
diet in, cod liver oil and fruit juices, 275
diet in, nutritive requirements, [Ebbs] *339
diet in, vitamins for, 207

PREGNANCY—Continued
diethylstilbestrol oral dosage in, [Abarbanel & others] ★1129
estrogen relation to certain signs in (especially "spiders"), [Bean] 1412—ab
food rationing for expectant mothers, Germany, 1360
industrial employment during, (A.M.A. Section Committee report) [Hesseltine & others] ★799; ★801
Interruption of: See Abortion
Multiple: See Triplets; Twins
nerve supply to uterus and birth canal in, [Hingson & Edwards] ★225; ★227
pelvic irradiation during, microcephaly after, 54—E
pregnandiol excretion and progesterone treatment, 162
Psychosis after: See Insanity, puerperal
syphilis (congenital) in, mapharsen for, [Astrachan & Cornell] ★748
teeth decay in relation to diet, [Ebbs] ★344
ultraviolet burns and (Council report) ★515
Urine: See Gonadotropins, chorionic
uterus rupture from automobile accident, [Woodhull] 82—ab
whooping cough inoculation, effective in newborn, [Cohen & Scadron] ★656
PREGNANDIOL excretion in pregnancy, 162
excretion in urine in amenorrhea, [Rydberg & Pedersen-Bjergaard] ★1117
PREHABILITATION: See also Rehabilitation
for industrial trainees, [Sawyer] 853—ab
PREMATURE Infants: See Infants
PREMEDICAL Work: See Education, Medical
PREPAREDNESS, Medical: See Medicine and the War
PREPAYMENT Plans: See Hospitals, expense insurance; Medical Service plans
PRESCRIPTION: See Calamine; Food; Narcotics
PRESIDENT'S Birthday Fund: See Poliomyelitis
PRESSURE: See also Barometric Pressure; Suction
low, areas, inhaling carbon dioxide-oxygen mixture in, [Tarasenko] 1114—ab
low, in treating whooping cough, [Lauener] 626—ab
oncotic, in edema, [Juncadella Ferrer] 157—ab
wave (externally applied), blast effect due to, [Williams] 376—ab
PREVENTIVE MEDICINE, courses at Pennsylvania, 272
importance, England, 613
in industry, [Foulger] 849—ab
PRICE Control: See Drugs; Glasses
PRINCETON University, medical scholarship established at, 203
PRIORITIES AND ALLOCATIONS: See also Rationing (cross reference)
air plane travel, "life and death" emergencies, 204
ascorbic acid (vitamin C) 57
biologic products in syringes, 138
butter makers to reserve 30%, 352
cinchona bark, 439
citrus juices, 525
health supplies material, 1292
gas masks, 438
interns and residents, P. and A. restrict use, 1288
methyl alcohol, 352
physical therapy equipment, 685
refrigerating system, material to repair, 1359
rotenone insecticide, 525
rubber gloves, England, 695
PRISONERS: See also Crime; Criminals
characteristics of institution inmates in 1940, 1354—E
of war, artificial limbs for British in German camps, 1172
of war (enemy) scientific journals for, 534
PRIVILEGED COMMUNICATIONS, American Law Institute Model Code of Evidence, 1377—OS
PRIZES: See also Fellowships; Lectures; Scholarships
American Association of Obstetricians, Gynecologists and Abdominal Surgeons, 418
A. M. A. Distinguished Service Medal, nominations open, 1222—E
American Pharmaceutical Manufacturers' Association awards, 273; 435—E
Argentine, 208
Borden Co., 1298
Buchanan Medal, 365
Capps, (awarded) 690; (competition open) 1169
Copley Medal, 365
Chancellor's Medal, 1169
Distinguished War Service Awards: See World War II, heroes
Fischer (L. C.) Awards, 446
Fitte (Rolfo) Foundation, for research work on pollomyelitis, 696
Foundation for Study of Cycles, 776
Gibbs (Willard) Medal, 611
Gullstrand Medal, 365
Howe (Lucien), competition open, 363
Ill (Edward J.) Award, 691
Jeffries (John) Award, 272
Lilly (Eli) Medal, 531; 1236

PRIZES—Continued
Lisa (James R.) Award established, 271
Mayer (1st award; ask recommendations for 2nd award) 1405
National Noise Abatement Council Achievement Award, 612
Nu Sigma Nu Medal, 775
Oberlin Award of Lake County (Ind.) Medical Society 132—E
Order of the Purple Heart: See World War II
Pittsburgh Award, 877
Raleigh's, N. C., gold key to outstanding citizen, Webb, Jr., 447
Reed (Walter) Medals, 364
Research Council on Problems of Alcohol, established, 365
Rosenberger Medal, 61
Royal Society, awarded, 365
San Francisco Surgical Society, 270
Silver Star Medal: See World War II
Snow Medal, 611
Southern Medical Association, 204
Van Meter Prize, 141
Virginia awards for research in state hospitals, 694
PROACTINOMYCIN, anti-infective agent, [Smith] 851—ab
PROCAINE HYDROCHLORIDE: See also Anesthesia
sulfonamides antagonistic to, [deWaal] 1113—ab; [Legge] 1113—ab
test in differentiating intervertebral disk from sciatica, [Hyndman & others] ★390
PROCTOLOGY, Argentine Society of, 696
PROCTOSCOPY in colon diverticula, [Jackman & Bule] ★1144
PROCUREMENT and Assignment Service: See Medicine and the War
PROFESSIONS: See also Dentistry; Medicine; Nursing; etc.
U. S. Government Manual for Professional Men, 205
PROFLAVINE in Clostridium welchi infection, [McIntosh] 1181—ab
powder in wound therapy, [Mitchell] 156—ab
PROGESTERONE desoxycorticosterone chemical relationship, [Neumann] 298—ab
Excretion Product of: See Pregnandiol
treatment for uterine bleeding in girls, [Allen] 787—ab
treatment in pregnancy, 162
treatment in pregnant diabetic, 1420
treatment of psychosis, [Schmidt] ★190
treatment of spontaneous abortion, [Mason] 73—ab
PROMIN treatment of tuberculosis, 763—E; 798
PROPAMIDINE in chronic wound infection, 946—E
PROPYL ALCOHOL: See Isopropyl Alcohol
PROPYLENE GLYCOL vapor control of air borne infection, 261—E; 301; [Henle] 890—ab
PROSTATE biopsy through rectal wall, 382
cancer and androgens relationship; priority; also in irradiating testis, [Huggins] 147—C; [Munger] 1409—C
cancer and hormones, [Creevy] 788—ab
cancer, castration and/or estrogen for, [Chute] 463—ab; 980—ab
cancer, castration for, [Alyea] 979—ab; [Randall] 980—ab
cancer, diethylstilbestrol effect on neurologic symptoms [Clarke & Viets] ★499; (correction) 694
cancer, serum "acid" phosphatase in, [Sullivan] 78—ab
female obstructing; transurethral resection, [Folsom & O'Brien] ★573
hypertrophy (benign), perurethral methods in, [Chapman] 1311—ab
Prostatin depletent, 453—BI
PROSTIGMINE: See Neostigmine
PROSTITUTION, control, federal May bill, 444—OS
gonorrhea in 500 women, sulfathiazole for, [Strauss & Grunsteich] ★1187
PROTAMINE Zinc Insulin: See Insulin
PROTEIN: See also Casein; Eggs, whites of; Meat
beverage (milk, dryco, egg white), [Bauman & Gage] ★1283
diet content for aged, [Tuohy] ★45
diet for pregnant and lactating women, [Ebbs] ★340
diet (high) in portal cirrhosis, [Greene] ★715
diet in edema of renal origin, [Lehnhoff & Binger] ★1321
diet treatment of liver damage, [Ravdin & others] ★322
hydrolyzed, to counteract postoperative nitrogen loss, 346—E
hydrolyzed, treatment of shock from hemorrhages, [Elman & Lischer] ★498
in Blood: See Blood
reserve in liver, 518—E
Sensitivity to: See Anaphylaxis and Allergy
therapy (foreign), severe renal irritation from, [Taylor & Page] ★754
therapy (foreign), sudden death after, [Vance] 74—ab
PROTEUS vulgaris infections, propamidine in, 946—E

PROTHROMBIN in Blood: See Blood
PRUNES, Gerber's Junior Foods, 677
PRUNLAX, 69—BI
PRURIGO, treatment, ultraviolet rays, (Council report) ★128
PRURITUS, itching from burns in boy aged 4; calamine lotion prescription, 302
senile, treatment, especially diethylstilbestrol, [Abarbanel & others] ★1124; ★1125
treatment, ultraviolet, (Council report) ★128
PSEUDO-ISOCHROMATIC Color Test, 472
PSEUDOMONAS aeruginosa infection, propamidine in, 946—E
PSORIASIS, treatment, ultraviolet rays (Council report) ★128
PSYCHIATRIST needed, Calif., 530
PSYCHIATRY: See also Neuropsychiatry; Orthopsychiatry; Psycho—;
American Academy of (first), 1103
American Board of (examinations) 273
aspects of marihuana intoxication, [Anslinger] 212—C
examination in subdural hematoma after blast injuries, [Abbott & others] ★739
non-war, lectures on, at Hartford, 1296
outpatient dept. at Mitchel Field, N. Y., 1159
patient load of physicians, [Ciocco & Altman] ★509; ★510; ★512
problems in rehabilitation, [Solomon] 865—ab
PSYCHOANALYSIS: See also Personality
Association for Advancement of, on wartime neurosis, [Tripp] 80—ab
Institute for, (lectures) 59; (course) 270
lectures at Topeka Institute, 1100
PSYCHONEUROSIS: See also Neurosis
mechanism of fatigue in, [Portis & Zitman] ★569
PSYCHOSIS: See also Mental Disorders
after atabrine, 765—E; (correction) 878
in soldier with malaria; atabrine cures, [Brill & Pellicano] ★1150
premenstrual, progesterone in, [Schmidt] ★190
War: See Neurosis, War
PSYCHOSOMATIC MEDICINE, committee on, N. Y., 960
course at U. of Illinois, 270
problems, American Society for Research in (first meeting) 517—E
PSYCHOTHERAPY: See also Hypnosis; Psychoanalysis
Association for Advancement of, (lectures on child psychotherapy) 203; (elections) 611
PUBESCENCE: See Adolescence
PUBLIC Health: See Health
Lectures: See Lectures
Schools: See Schools
PUENTE, JOSE J., death, 696
PUERPERAL INFECTION, Holmes's paper on (1843-1943) 692; [Daily] ★1006; 1094—E
mortality rate, Rio de Janeiro, 1238
treatment p-chloro-xylenol solution intramuscularly, 779
PUERPERIUM, breast painful engorged, diethylstilbestrol for, [Abarbanel & others] ★1123
diethylstilbestrol and methyl testosterone, [Rutherford] 13—ab
leave from work for, (A. M. A. Section Committee report) [Hesseltine & others] ★801
psychosis, progesterone for, [Schmidt] ★190
PUERTO RICO, University of: See University
PULMONARY: See Lungs
Embolism: See Embolism
Tuberculosis: See Tuberculosis, Pulmonary
PULSE frequency, seasonal changes in, [Paul] 87—ab
PUPILS, Adie's syndrome, [Lowenstein] 288—ab
PURGATIVES: See Cathartics
PURPLE Heart Award: See World War II, heroes
PURPURA, hemorrhagic also thrombopenic, fatal after sulfonamide, [Sutliff & others] ★307
thrombopenic, from sulfonamide, [Losada L.] 220—ab
thrombopenic, pectin effect on blood coagulation in, [Isaac] 1306—ab
thrombopenic, radium emanation or x-rays for hypertrophic tonsils in, 472
PUS: See Abscess; Infection, pyogenic; Pyoderma
in Urine: See Pyuria
PYELITIS, treatment, p-chloro-xylenol solution intramuscularly, 779
PYLORIC CANAL, functions: distinct gastric region, 962
PYODERMA, eczematous, sulfathiazole in; sensitization reaction, [Livingood & Pillsbury] ★406
perianal, low fat diet and thyroxin for, [Sutton & Marks] ★1344
PYREXIA: See Fever, therapeutic
PYRIDOXINE Hydrochloride, N. N. R. (Lakeside) 593; (Upjohn, Wyeth) 945
treatment of chorea in pregnancy, [Rabin] 378—ab
PYROXYLIN impregnated cotton, allergen-proof encasings, 345.
PYRUVATES in Blood: See Blood
PYURIA, treatment: clinical importance, [Braasch] 623—ab

Q

Q FEVER, [Zemp] *828
QUAKERS, American Friends Service Committee aids starving children in, 1104
Society of Friends, war workers, 534
QUARTERLY CUMULATIVE INDEX MEDICUS: See American Medical Association
QUEEN'S University, Thomas Gibson memorial, 1298
QUINACRINE (atabrine), cerebral malaria in soldier, recovery under, [Brill & Pellicano] *1150
mental symptoms after; also Surgeon General's Office Circular Letter No. 22 on its clinical use, 765—E; (correction) 878
QUINIDINE Hydrochloride Treatment: See Arrhythmia
QUININE, collect 150,000 grains, 845
Dihydrochloride, N. N. R., (Endo) 593
further conservation of cinchona bark, 439
National Quinine Board pool, 434—E; 842—E; 845
research fellowships by Cinchona Products Institute, 878
substitutes in treating malaria, Surgeon General's Office Circular Letter No. 22, 765—E; (correction) 878
use, insure economy, under Hitler's rule, 953

R

R M Dietary Supplements Vitamin A and D, 699—BI
RABBIT, urge use for food; not for pregnancy test, [Weisman & Coates] 1109—C
RABIES in the United States, 255—ab
in a squirrel, 1404
treatment, acute neuritis and neuromyelitis after, [Freile] 548—ab
RACES: See also Indians, American; Negroes
foundations for a race biology, Germany, 1360
RADIATION: See also Cyclotron; Light; Roentgen Rays; Ultraviolet Rays
cataract, (Council report) *515
microcephaly after pelvic irradiation during pregnancy, 54—E
Treatment: See Breast cancer
uterine cervix ulcers (noncarcinomatous) after [Jacox] 464—ab
RADIATORS, steam, as infection carriers? 985
RADIO, Frequency Energy Apparatus: See Diathermy apparatus
health education by, O., 1297
"Health Information Hour" suspended, Cleveland, 204
Langmuir delivers A. A. A. S. presidential address via, 204
Program by A. M. A.: See American Medical Association
stations, A.M.A. press relations, 1367—OS
RADIOACTIVE Phosphorus: See Phosphorus
plasma protein use in study of "lost plasma," 1354—E
substances, therapeutic use, 54—E; [Lowber] 706—ab
RADIOLOGY, Texas Society cancels meeting, 204
RADIUM effect on gastric acidity, [Jenkins] 215—ab
Emanation: See Radon
supply, disposition by doctor while in service? 382
RADON seeds vs. tonsillectomy, 896
treatment or x-rays for hypertrophic tonsils in purpura, 472
RAIDS: See Air Raids
RAILROADS, fatal accidents in 1942, 694
hospital trains, 522
RASH: See Eruptions
RAT BITE FEVER in dogs and cats, 713
RATIONING: See Clothing; Coffee; Food; Oil; Paper; Priorities and Allocations; Technicians; Sugar
RATS: See also Rat-Bite Fever
cotton, etiologic role in virus (?) pneumonia, 197—E
transporting disease agents, 840—E
RAYS: See Radiation
RECIPROCITY: See Licensure
RECORD; Record Librarians: See Medical Record
RECREATION: See Medicine and the War
RECRUITS: See Medicine and the War, soldiers and recruits; World War II
RECTUM: See also Anus; Proctology; Proctoscopy
biopsy of prostate through wall, 382
disease, role of anal glands in, [Hill & others] *742
lymphogranuloma venereum of, surgery for, [Borjas] 547—ab
tumors, primary lymphoid, resembling internal hemorrhoids, [Smith] *495
RED CROSS: See also Red Cross, American
German, entrusted with entire transport of sick, 1292
International, aids starving children in France, Greece, etc., 1104
RED CROSS, AMERICAN advisory committee, Dr. Weed chairman, 1171
campaign for funds, 764—E
RED CROSS,—Continued
eastern area director: Dr. Busch, 878
Fieser's (J. L.) work expanded for, 364
midwestern area director, Dr. McGinnes, 776
report, 961
RED HEARTS, 69—BI
REDOX potential in latent allergy, [Albus] 88—ab
REDUCING: See Obesity
REDUVIDAE: See Assassin bugs
REED (Walter) Medals: See Prizes
REFLEX, Carotid Sinus: See Carotid Sinus syncope
pleural, syncope in pneumothorax, [Ormond] 790—ab
pupillary, Adie's syndrome, [Lowenstein] 288—ab
REFRIGERATION, anesthesia (Allen), preceding amputation prevents thrombosis, [Crossman] 244—ab
Therapeutic Use: See Cold, therapeutic
REFRIGERATOR, allergy in butcher, 896
preference ratings for material to repair, 1359
workers, genital brucellosis in, [Purriel] 1417—ab
workers, sulfur dioxide, hazard to, 302
REFUGEE Physicians: See Physicians, foreign
REGISTRANTS: See Medicine and the War
REGISTRY: See under Cancer; Tropical Disease; Technicians
REHABILITATION: See also Prehabilitation center (Lindbergh home) for women with venereal diseases, N. J., 60
Industrial: See Industrial Accidents; Industrial Health
of selectees with hernia, Illinois, 439
symposium on, [various authors] 863—ab
vocational, federal laws on, (Bureau report) 1382—OS
RELAXING Incision: See Skin graft
RELIEF WINGS Inc., 137
RELOCATION: See Physicians
RENAL: See Kidneys
Arteries: See Aneurysm
REPORTABLE Disease: See Disease
REPRODUCTION: See Pregnancy
RESEARCH: See also Science; under specific headings as Cancer
Clinical: See Clinical research
Council on Problems of Alcohol (prize for research), 365
Fellowships: See Fellowships
grants available for, (Plotz Foundation) 365; (in endocrinology by National Research Council) 205; (by A. M. A.) 1368—OS; 1390—OS; 1393—OS
in British army, 1299
in Russia in the war, [Lavrentiev] *436
Institute of Medical Research dedicated, Toledo, 1235
Medical Research Council: See Medical Research Council
National Research Council: See National Research Council
Prizes for: See Prizes
RESIDENCIES, approved, by A. M. A., 769—OS
statistics, *1024; *1025
RESIDENCY in air force hospitals, 1223
Procurement and Assignment Service relation to, [Diehl] *637; 678—E
restrictions on use, P. and A. recommendations, 1288
shortage, (Council report) 1397—OS
status of, statistics, [Lull] *640
war effort and, 1094—E
RESORCIN dermatitis and resorcinol dyes, 985
RESPIRATION, artificial: See Resuscitation
at high altitudes, [Lenggenhager] 294—ab
patterns at birth, 1354—E
roentgen life test of stillborn, [Dillon] 457—ab
ultraviolet radiation effect on, (Council report) *514
RESPIRATORS, A. M. A. Council report, 1371—OS
contact dermatitis from, [Lewe] *422
RESPIRATORY QUOTIENT: See Metabolism, basal
RESPIRATORY SYSTEM: See also Bronchus; Lungs; Nose; Pleura; Trachea
Disorder: See Lungs; Pneumonoconiosis
Infection: See also Colds; Influenza; Pneumonia; Tuberculosis, Pulmonary
infection (acute), with unusual lung changes, [Duggan] 1414—ab
infection (cross), ultraviolet rays to reduce, in hospital, [Robertson & others] *908
infection of upper, relation to rheumatic fever, [Ditkowsky & others] *992
infection (common), control, [Keefer] *802
infection, vitamin A or cod liver oil no effect, [Lewis & Barenberg] 212—C
REST: See also Convalescent; Sleep
home for torpedoed seamen, 1358
periods (midshift) for workers, [Bristol] 871—ab
supernormal circulation in, [Starr] 1111—ab
RESTAURANT ordinance, Salina, Kan., 271
RESUSCITATION of newborn by tracheal intubation, [Torpin] 147—C
RESUSCITATOR, E and J (Fox Model), 1219
RETAN Technic: See Cerebrospinal Fluid drainage
RETICULOCYTES, oxygen therapy effect [Reinhard] 1245—ab
RETINA, detachment, remote trauma as cause 71—C
examination in hypertension, [Daley & others] *385
retinopathy in juvenile diabetes, [Bloch] 74—ab
vessels, correlation with renal vascular changes, [Castleman & Smithwick] *1258
RETROBULBAR Neuritis: See Nerves, optic
REVISTA: REVIEW: See Journals
RH FACTOR, clinical significance, [Boorman] 625—ab
hemolytic transfusion reactions from, [Diamond] 463—ab
studies on, [Fisk] 541—ab
RHEUMATIC FEVER, Cardiac Complications: See Heart disease, rheumatic; Myocarditis, rheumatic
clinicopathologic study in whites and Negroes, [Bruno] 463—ab
demonstration, Va., 1405
diagnosis in children, conditions causing confusion, [Hansen] *987
epidemic in children's institution after tonsillitis outbreak, [Ditkowsky & others] *991
in children, sulfonamides to prevent recrudescences, [Hansen] 621—ab
RHEUMATISM: See also Arthritis
Acute Articular: See Rheumatic Fever
Empire Rheumatism Council cooperates with British Orthopedic Association, 963
fight against, Germany, 1164
New York Association organized, 532
Robinson's for, 884—BI
Sulfo-Bath, 69—BI
symptoms in prostate cancer, diethylstilbestrol for, [Clarke & Viets] *499; (correction) 694
RHEUMATOID Arthritis: See Arthritis
RHINITIS, atrophic, ozena, 1185
atrophic (primary), estrogens for, [Ruskin] 288—ab
atrophic, surgical therapy, [de Lejarza] 793—ab
RHINOPHYMA, ultraviolet rays for, (Council report) *127
RIBOFLAVIN deficiency and circumcorneal injection, [Scarborough] 707—ab
deficiency, hypochromic anemia in, iron therapy with and without yeast, [Moore & others] *245
flour enriched with, [Williams & others] *943
growth stimulation by, 615
cancerous tissues, 519—E
N. N. R., (Abbott) 677; (Walker) 945
treatment, superficial cornea vascularization after, [Sandstead] 624—ab; (correction) 878
RIBS, cartilage repair of cranial defects, [Pudenz] *478
cause of left costovertebral pain? 629
removing in cardiac dysphagia, [Newton] 789—ab
RICKETS, sugar absorption and phosphate metabolism vs. vitamin D, [Laszt] 626—ab
RICKETTSIA: See also Q Fever; Typhus
diseases, Pan American Sanitary Bureau, committee, 612
staining (selective), [Gracián Casado] 296—ab
RIEDEL'S Struma: See Thyroiditis, chronic
RINGWORM: See Dermatophytosis; Tinea
RISING, early, after thigh amputation prevents embolism, [Samuels] 706—C
ROAD Accidents: See Accidents, traffic; Automobile accidents
ROB, CHARLES GRANVILLE, awarded Military Cross, 768
ROBB-Steinberg Method: See Roentgenography
ROBERTS, Justice, opinion affirming guilt of A. M. A. and Medical Society of D. C., 262—E; 267—OS
ROBINSON'S for Rheumatism, Arthritis, Neuritis and Lumbago, 884—BI
ROCHESTER, N. Y., prehabilitation plan of industrial trainees, [Sawyer] 853—ab
ROCKY MOUNTAIN MEDICAL JOURNAL: See Journals
ROCKY MOUNTAIN SPOTTED FEVER: See Medicolegal Abstracts at end of letter M
RODENTS: See also Rabbits; Rats; Squirrels
plague, war and spread of, [Gelger] 70—C
ROENTGEN RAYS, caudal and cranial direction of in examining thorax, [Enquin] 295—ab
Diagnosis: See under names of specific disease; Roentgenography
examination (routine) of industrial applicants, [Wishard] *812; (discussion) 863—ab
fee schedule in effect, W. Va., 272
films (scrap), disposal of, 630
mobile units for Russia, 1355
pioneer dies: Harold J. Suggars, 1103
precaution against, England, 275
technicians, number in all hospitals, *1020
ROENTGEN THERAPY: See also Acne vulgaris; Hyperthyroidism; Pituitary tumors; Steatoma; Tonsils, hypertrophic
action, on infection, [Bisgard] 891—ab; 1243—ab
contact, of cavernous hemangioma, [Kerr] 153—ab

ROENTGEN THERAPY—Continued
in adolescent, normal offspring after, [Kaplan] ★1199
plus pyrexia for cancer, [Shoulders] 217—ab
skin reaction (burn) after (replies) [Pomeroy] 714; [Weinberg] 798
total body, [Medinger] 458—ab
ROENTGENOGRAPHY: See also Bronchography; Liver abscess; Spine
angiocardiography by Robb-Steinberg method, [Taylor & McGovern] ★1270
contrast medium sensitivity, ocular test for, [Archer] 978—ab
contrast mediums, unfavorable sequelae and deaths after, [Pendergrass] 977—ab
organography with diodrast concentrated solution 70%, (Council report) 1351
ROGERS, HENRY S., awarded Purple Heart, 270
ROOMS: See Sickrooms; Temperature, room
ROOSEVELT, F. R. President's Birthday Fund for Poliomyelitis, 272
RORSCHACH test after blast injuries, [Abbott & others] ★739
ROSACEA, ultraviolet rays for (Council report), ★127
ROSEN, ISIDORE, distributor of cosmetics, 69—BI
ROSENBERGER Medal: See Prizes
ROTENONE insecticide, use now rigidly restricted, 525
ROURKE-Ernstene Test: See Blood sedimentation
ROWLAND, LESLIE W., death, 272
ROYAL: See also British
Academy of Medicine, Barcelona, (Von H. Mooser honorary member) 365
College of Physicians (editions), 365; (postwar housing plans and) 962
College of Surgeons (meeting place for American and Canadian medical officers) 143; (collection of war injuries) 695
Society, (prizes awarded) 365
RUBEOLA: See Measles
RUBBER bandage (Bier constricting) for chilblains, [Herxheimer] 792—ab
gloves, control, England, 695
gloves, sulfanilamide plus talcum in, 714
gloves, talcum from, cause of peritoneal granuloma, [Seelig] 1304—C
saving; tips on, 611
service (gas) masks, dermatitis from, [Lewe] ★422
sponge substitute: linoleic acid, 137
RUBBING alcohol, substitutes for, 630
RUPTURE: See Hernia; under name of specific organ as Urethra; Uterus
RURAL: See also Farm
areas, supply of physicians, OWI release, E-1158; ★1162
hospital programs of Commonwealth Fund, 680—E
vs. urban percentage of institution inmates in 1940, 1354—E
RUSSIA, advances in muscle physiology, 347—E
All Union Institute of Experimental Medicine, 436; 521
Anglo-Soviet Medical Council provides translations of articles, 275
experimental medicine in [Lavrentiev] ★436
mobile x-ray units for, 1355
scientific work in Leningrad, [Kercheev] ★766
treatment of fractures of hands and fingers caused by gunshot wounds, [Gusynin] ★952
RUSSIAN-American Committee for Medical Aid to U. S. S. R., Inc., 686
medical supplies and aid to, (sent by England) 63; (books for medical students requested) 200; (serums and vaccines from South Africa) 275; (from United States) 200; 438; 686; 695
War Relief, Inc., (request books) 200; (Russia expresses gratitude for aid) 438; (needs instruments and medical supplies) 1359
RUX Compound (Regular and Strengthened) 699—BI
RYLE, J. A., appointment, at Oxford, 1172

S

SACCHARIN as syrup substitute, 196—E; (Council statement) 1370—OS
SACRAL CANAL, Anesthetic injected into: See Anesthesia, caudal
SACRUM, parasitic fetus removed from, in boy, [Gray] 460—ab
tumoral calcinosis, [Inclan] ★490
SAFETY: See also National Safety Council
campaign opened, 272
program in contract shipyards, [Drinker] ★822; 862—ab; [Lund] 849—ab
SAILORS: See also Navy
skin from ultraviolet radiation, (Council report) ★513
torpedoed seamen, rest home for, 1358
ST. LOUIS Type: See Encephalitis, Epidemic
SALARIES: See Wages
SA-LAX, Crawford's, 453—BI
SALESMEN, fraudulent: See Impostors
SALMONELLA, food handling carriers, 1156—E
Typhosa: See Eberthella typhosa
SALPINGITIS: See Oviducts, inflammation
SALT: See also Sodium chloride
free diet in edema of renal origin, [Lehnhoff & Binger] ★1321
iodized, to prevent goiter, [Curtis & Fertman] ★1267
plus vitamin C to prevent industrial heat exhaustion, [Goodhart] 871—ab
SALVAGE: See Waste Material Campaign
SAMARITAN Treatment Preparations, 280—BI
SAN FRANCISCO County Medical Society (plan for medical care of strangers) 270
Session: See American Medical Association Surgical Society, (essay contest) 270
SANATORIUMS: See Tuberculosis
SANDERS-Jungeblut poliomyelitis "inhibin," 194—E
SANITARY conference, committee to organize, Argentina, 450
engineering, National Research Council created committee on, 138
engineers, procurement, 602: 1289
SANITATION: See also Health
restaurant ordinance, Salina, Kan., 271
"Wardens" organized, N. J., 691
SARCOIDOSIS, Boeck's, [Bernstein] 290—ab
4th type: type of tuberculosis in Negro, [Thomas] 1111—ab
SARCOMA: See also Fibrosarcoma; Lymphosarcoma; Neurosarcoma; etc.; under organ or region affected.
etiology, sunlight and ultraviolet rays, 1285—E
Ewing's, also osteogenic, of chest wall, [Dolley & Brewer] ★1135
primary, of mediastinum (rare), [Dolley & Brewer] ★1133
treatment, total body irradiation, [Medinger] 458—ab
SARSAPARILLA, Sphinx's (Dr.), 69—BI
SASSAFRAS tea substituted for coffee, 986
SCARBOROUGH Intelligence, [Mellanby] 708—ab
treatment, tetraethylthiuram monosulfide, [Percival] 156—ab
wartime, [Carslaw] 83—ab
SCALDS: See Burns
SCALP: See also Alopecia: Hair
immediate covering of denuded skull, [Dorrance] 284—ab
SCAPULA, winged, traumatic, [Hauser & Martin] ★667
SCAR: See Acne; Cicatrix
SCARLET FEVER, Dick test, [Invaldi] 220—ab
encephalomyelitis, [Winkelman] 461—ab
immunization of student nurses, 985
in dogs and cats, 713
in Germany, 200; 602: 1360
"rash toxin" in streptococcic sore throat, [Bloomfield & Rantz] ★317
treatment, human convalescent serum (Council report) ★19
SCHAMBERG'S disease, thrombocyte deficit test, [Maynard & Hoilinger] ★1195
SCHICK (Bela) Lecture: See Lectures
SCHISTOSOMIASIS, Manson's, [Kopplisch] ★936
2 cases in Michigan, [Blum & Lilga] ★125
SCHIZOPHRENIA: See Dementia Precox
SCHLEMM'S Canal, Opening of (Barkan's Operation): See Goniotomy
SCHMELKES, FRANZ C., death, 447
SCHMIDT, J. R., cited for heroic action, 610
SCHOLARSHIPS: See also Fellowships
Hirsch Medical, 450
at Princeton University medical, 203
Westinghouse Science Talent Search, 777
SCHOOLS: See also Children, school; Education; Students; University
Administrators, American Association of (Bureau report) 1374—OS
air borne infections, ultraviolet lamps to prevent, 382
county society approves plan to examine high school boys, N. Y. C., 60
for Nurses: See Nursing
for Technicians: See Laboratories; Occupational Therapy; Physical Therapy
for training medical attendants for merchant ships established, 1292
for training medical record librarians, request A. M. A. approval, 770—OS; ★1088; 1398—OS
health education, National Conference for Cooperation in, (Bureau report) 1374—OS
health service; physicians, American Academy of Pediatrics Standards, 619
in East Prussia teach their pupils personal hygiene and decent manners, 768
lunch program, [Stiebling] ★837
medical service in, under Hitler's rule, 525
school of military government at Charlottesville, Virginia, 683
School of Military Neuropsychiatry, 265; 1154—E; [Fulton & Farrell] ★1159
social hygiene in (4 offered for), N. Y. C., 203
SCHOOLS, MEDICAL: See also Education, Medical; Students, Medical; University; under names of specific schools
Accelerated Program: See Education, Medical, curriculum (accelerated)
approved by A. M. A., 1398—OS
Continuation Courses: See Education, Medical, graduate
faculties (adequate) maintenance, [Diehl] ★635; 678—E
SCHOOLS, MEDICAL—Continued
Faculty of Medicine of Rosario, 1300
Graduates: See Graduates
Liaison Committee of A. M. A. Council and Association of American Medical Colleges meeting, 769—OS; 1397—OS
School of Aviation Medicine, 25th year, 1355
United States Medical Academy, legislation proposed, 1380—OS
University of Alabama establishes school of medicine, 774
University of Tennessee, expulsions, Supreme Court upholds, 204
West Virginia U. and Medical College of Virginia cooperate, 877
SCIATICA, diagnosis (differential) procaine test, [Hyndman & others] ★390
SCIENCE: See also Research
Academy of: See Academy
American Association for Advancement of, (President Langmuir's address on radio), 204; (meeting canceled) 1405
Association of Scientific Workers in Great Britain, 612
Foundation for the Study of Cycles (offers prize) 776
Gorgas Hospital requests material, 1405
intellectual honesty, 490—ab
Medical: See Medicine
Medical Society of New Jersey, endowment funds scientific work, 775
National Science Fund of National Academy of Science: Mayer Award, 1405
of Tension Therapy: Cropp Therapeutic Couch, 557—BI
resources mobilization, federal laws (Bureau report) 1382—OS
SCIENCE SERVICE, unscientific; death rate and shortage of doctors, 172
Talent Search (2nd) Westinghouse scholarships, 777
SCLERA, ochronosis, (relation to vitamin C) [Steele] 700—C; (Pope's British report) [Twyman] 784—C; [Smith] 1304—C
SCLERODERMA, ultraviolet rays for, (Council report) ★129
SCLEROSIS: See also Arteriosclerosis; Liver cirrhosis; Nephrosclerosis
hereditary, Friedreich's ataxia: walking on toes sign of? 897
multiple, etiologic factor in retrobulbar neuritis, [Bendel] 288—ab
multiple, spinal fluid changes in; also incidence of syphilis, 551
SCOLIOSIS: See Spine curvature
SCOTCH Tape Technic: See Oxyuriasis
SCRAP: See Waste Material Campaign
SCROFULODERMA, ultraviolet rays for, (Council report) ★129
SCURVY, nutritional status, [Kruse] ★589
SEA: See Navy; Sailors; Ships; Submarine
SEABOARD Medical Association, (elections) 611
SEAMEN: See Sailors
SEASONS at time of conception: factor in newborn, [Petersen & Mayne] ★929
pulse frequency and blood pressure changes, [Paul] 87—ab
relation to rheumatic fever in children, [Ditkowsky & others] ★992
SEBACEOUS Cyst: See Steatoma
SECRETARIES: See Societies, Medical; Stenographers
SEDATIVES AND HYPNOTICS: See also Hypnosis; Psychotherapy
safety of paraldehyde, [Miller] 783—C; [Burstein] 1241—C
sciatic nerve injury from paraldehyde injection [Woodson] ★1343
SEDIMENTATION Rate: See Blood
SELECTIVE SERVICE: See Medicine and the War
SEMEN: See Spermatozoa
SEMMELWEIS, IGNAZ P., prevention of puerperal fever in 1860, [Daily] ★1006
SENILITY: See Old Age
SENSATION, Loss of: See Anesthesia, pathologic
SENSES: See Hearing; Vision; etc.
SENSITIVITY; SENSITIZATION: See Anaphylaxis and Allergy; Sulfathiazole
SEPTICEMIA: See also Bacteremia
treatment, sulfonamides, in childhood [Kanof & others] ★11
SERODIAGNOSIS: See Brucellosis; Syphilis
SERUM: See also Antiserum; Biologic Products; Vaccine
Convalescent: See Keratoconjunctivitis; Measles; Pneumonia, atypical; Scarlet Fever
Gonadotropins: See Gonadotropins
immune, for Leptospira icterohemorrhagia in mice, [Larson] 980—ab
plasma, carbon dioxide combining power after standing in ice box, (reply) [Wakerlin] 552
plasma, civil air patrol to transport in emergencies, 601
plasma, graduate course on use and technics of, New York, 363; 1170
plasma (heated), toxicity of, 596—E
plasma ("heat") in hemorrhagic shock, use radioactive plasma protein to study, 1354—E
plasma (pooled), safety of, 946—E
plasma protein storage, [Beattie] 377—ab
plasma reserves, 266

SERUM—Continued
plasma, toxicity: A and B substances, [Aubert] 1241—C
Plasma Transfusion: See Blood Transfusion
precipitation reaction by sulfuric acid, [Tabanera] 295—ab
Serum-Plasma Center, Iowa, 1403
Sickness: See Anaphylaxis and Allergy
SERVICE MEN: See Medicine and the War; World War II
SESAME OIL estrogens in, tumors after injecting into muscle, [Conrad & others] ★237
SETTERLIND-Krause Method: See Cadmium
17D Virus: See Yellow Fever
SEX: See also Sterilization, Sexual
Desire: See Libido
difference in development of pelvic conformation, [Morton] 283—ab
factor in burn produced by ultraviolet rays (Council report) ★515
Function, Decline of: See Climacteric; Menopause
Function, Development of (Puberty): See Adolescence
Glands: See Gonads
Hormones: See Androgens; Estrogens; Gonadotropins
Organs: See Genitals
Perversion: See Homosexuality
predetermination; establishment of genotypes, 348—E
ratio in relation to daily temperature at time of conception, [Petersen & Mayne] ★929
SHAMPOO, effect on growth of hair, 1116
SHANDS (G. D.) Memorial Loan Fund, 1297
SHARP & DOHME, (Dr. Crosson becomes industrial consultant) 776; (Army-Navy E to) 953
SHELL: See Wounds, gunshot
SHERMAN Anti-Trust Act, Justice Roberts opinion on A. M. A. indictment 262—E; 267—OS
SHIGELLA, food handling carriers, 1156—E
SHIPLEY-Hartford Retreat test in subdural hematoma, [Abbott & others] ★664; ★739
SHIPPING: See Ether; Food rationing
SHIPS: See also Navy; Sailors; Submarine
Bombs Attacking, effect of: See Bombs, water blast
hospital, 3 new, 1225
merchant marine polyclinic, 1404
merchant, medical attendants for, establish school for training, 1292
named after famous medical men from Johns Hopkins, 1358
transport disease agents, 840—E
SHIPYARD, Conjunctivitis: See Keratoconjunctivitis
health and safety program in, [Drinker] ★822; (discussion) 862—ab
work for handicapped, [Harvey & Luongo] ★103
workers, U. S. Maritime Commission wishes help of A. M. A. Council, 1230—OS
SHMOOKLER Memorial Lecture: See Lectures
SHOCK, [Green] 285—ab
Allergic: See Anaphylaxis and Allergy
blocks, use after labor, 223
choice of anesthesia for seriously wounded in, [Beecher] ★899
delaying action of barbiturates, [Beecher] 372—ab
diagnosis (early): hemoconcentration, hematocrit or densimeter, [Royster] 790—ab
diagnosis of sudden collapse with attack of severe precordial pain, 471
Electric: See Electric
epinephrine, as sign of adrenal medulla pheochromocytoma, [Engel] 786—ab
hemorrhagic, "lost plasma" in; use radioprotein to study, 1354—E
immersion blast injuries, 679—E; 1220—E
in fever therapy, blood plasma for, [Pruce] ★935
Insulin: See Insulin shock
morphine dosage for wounded; warning, England, 778
peripheral, Lewis-Perry epinephrine test in, [Urrutia] 547—ab
pleural, in pneumothorax, [Ormond] 790—ab
sympathetic system and, [Tomb] 1113—ab
temperature (external) effect on, [Waklm & Gatch] ★993
Therapeutic: See Electric Shock; Metrazol; Typhoid
total collapse on physical exertion, [Jokl] 454—C
treatment, cooling vs. warmth, in, 432—E; (quotation from Goodwyn in 1788 and Snow in 1841) [Waters] 785—C; (experience in Spanish Civil War) [Perry] 966—C; (maintaining temperature at 90 F. rectal) [Fay, Brown] 1109—C
treatment in burns; importance of room temperature of 75 F., 1157—E; 1332—E
treatment, pectin solution, [Hartman & others] ★1337
treatment, potassium phosphate by cisternal puncture, [Stern] 545—ab
treatment; pure amino acids; hydrolyzed protein, [Elman & Lischer] ★498
treatment, serum and plasma, [Levinson] 1180—ab
SHOCK—Continued
vs. infection in treating compound fracture, 92
SHOES, type for women in industry (A. M. A. Section Committee report) [Hesseltine & others] ★800
SHORT WAVE: See Diathermy
"SHOT spotter," foreign body finder, [Moorhead] ★123
SHOULDER: See Scapula
SHREVE'S (Dr.) Anti-Gall-Stone Remedy; S and L Pills, 881—BI
SICKNESS: See Disease; Health; Patients; Therapeutics
Insurance: See Insurance, health
Rate of: See Vital Statistics
Serum: See Anaphylaxis and Allergy
SICKROOMS, deodorant for, 1116
SIGHT: See Vision
SIGMOID: See Colon
SIGMOIDOSCOPE in colon diverticula [Jackman & Buie] ★1144
SILICOSIS: See Pneumonoconiosis
SILK, artificial: See Nylon
SILVER, Argosine 453—BI
black dermographism on skin produced with, [Urbach & Pillsbury] ★485
nitrate treatment of burns, [Hamilton] 703—ab
protein (mild) U. S. P.: patient not allergic to, but to argyrol (Barnes), [Crlep] ★421
Star Medal: See World War II; heroes
SIMULATION: See Malingering
SINGER Surgical Stitching Instrument described, [Goodman] 120: ★289
SINGULTUS: See Hiccup
SINUS Bradycardia: See Bradycardia
Carotid: See Carotid Sinus
Cavernous: See Cavernous Sinus
Sphenoid: See Sphenoid sinus
SINUSES, NASAL, mucosa changes in asthma, 888
SINUSITIS, NASAL, treatment: sulfadiazine spray, gramicidin, penicillin [Bordley] 978—ab
SINUSTAT, McIntosh, (Council report) 591
SKELETON: See Bones
SKI injuries at Sun Valley, [Moritz] ★97
SKIN: See also Dermatology; Tissues
abnormal elasticity and vulnerability: Ehlers-Danlos syndrome, [Rocca] 709—ab
Burn: See Burns; Sunburn
cancer, photodynamic or optical sensitization: pathology, (Council report) ★515; 1285—E
changes from solidified carbon dioxide, 91
changes in fatal sulfonamide toxicity, [Sutliff & others] ★307
changes in rheumatic fever in children, [Hansen] ★987
changes in sprue syndrome, [Kaufman & Smith] ★168
Cleansing: See Detergents; Soap
Creams or Cosmetics: See Cosmetics
dermographism (black) [Urbach & Pillsbury] ★485
Disease: See also Acne; Dermatitis; Eczema; Pyoderma
Disease, (occupational): See Industrial Dermatoses
disease, ultraviolet ray treatment (Council report), ★126
disease, undesirable effects of ultraviolet radiation, (Council report) ★513
disease, vitamin therapy, [O'Leary] 151—ab
disinfectants, criteria for evaluation by A. M. A. Council, 593
disorders in diabetes, relation to vitamin deficiencies, [Rudy] 790—ab
Eruptions: See Eruptions
Fish Skin: See Ichthyosis
graft, history of, 1199—ab
graft, relaxing incision: dermatome flap method, [Harkins] 1247—ab
grafting (Thiersch and pedicle) use of propamidine in, 946—E
Hemorrhage: See Purpura
Infection: See Carbuncle; Furunculosis; Pyoderma
Inflammation: See Dermatitis
injuries (small) and light bombs, 117—ab
Itching: See Eczema; Pruritus; Scabies
Leishmaniasis of: See Leishmaniasis
lotion (calamine) prescription for, 302
lotions and creams treatment of sunburn, (Council report) ★514
Mycosis: See Dermatophytosis
"new skin," sulfonamide film, as surgical dressing, [Pickrell] 373—ab
oils as rubbing alcohol substitute, 630
Pigmentation: See also Blond; Brunet; Nevus
pigmentation, cstrone for coffee colored spots on face, [Rocca] 85—ab
pigmentation, green discoloration between toes, 300
Pigmentation, Loss of: See Leukoderma
protection against ultraviolet radiation or sunlight, (Council report) ★513; ★514
Protective Ointment: See Ointment
Rash: See Eruptions
Reaction: See also Skin test
reaction after irradiation for hyperthyroidism, (reptiles) [Pomeroy] 714; [Weinberg] 798
SKIN—Continued
reaction to histamine as desensitization index, [Browne] 289—ab
resistance, viral chemoprophylaxis, 435—E
sailors' or farmers', (Council report), ★513
Test: See also Skin reaction; Tuberculin test
test (brucellergen) for brucellosis, [Borts & others] ★319
tuberculosis, ultraviolet rays for, (Council report) ★128
tumors, melanomas, [Driver & MacVicar] ★413
Ulcer: See Ulcers
SKULL: See Cranium
SLANG, medical, 827—ab
SLEEP: See also Anesthesia; Rest
disturbances of infancy and childhood, 630
SLEEVE Graft: See Nerves
SMALLPOX, contacts, febrile reactions among, [Napier] 219—ab
fight against, Palestine, 779
outbreak, (Pa.) 61; 140; 448; 693; (1 case breaks 12 year record, Md.) 362; (Ohio) 692; (Ind.) 875; (imported from Bombay, stamping out, England) 1172
Vaccination: See also Vaccinia
vaccination (accidental) on both thumbs; 3 ways to prevent, [Trommer] 966—C
vaccination, duration of protection, 896
vaccination, eruptions, [Bloch] 466—ab
vaccination for industrial workers, [Bristol] ★816; [Leake] 852—ab
vaccination, Philadelphia, (hospitals require 140 of million persons) 693
vaccination program in Wichita, Kan., 531
SMELL: See Odor
SMILE-whistle reflex in parkinsonian syndrome, [Hanes] ★1152
SMITH, AUSTIN E., made secretary of Council on Pharmacy and Chemistry, 1368—OS
SMOKING: See Tobacco
SMOTHERING: See Suffocation
SNAKES and desert life of southwestern U. S., 1420
SNOW, JOHN (1841), cooling in shock, [Waters] 782—C
SNOW Medal: See Prizes
SOAP: See also Detergents
anti-infective agent, [Smith] 851—ab
SOCIAL Condition: See Housing
hygiene, American Association, (Snow Medal to R. L. Wilbur) 611
hygiene day, (Illinois) 690; (first, Canada) 1298
hygiene, 4 schools offered for, N. Y. C., 203
Insurance: See Insurance
Security Agency, survey shows opposition to hospital plan, 1171
Security program extension, federal legislation on, (Bureau report) 1381—OS
security in form of useful labor for older worker, [Carlson] ★806
service workers, number in all hospitals, ★1020
SOCIALIZED Medicine: See Insurance, health; Medicine, state
SOCIETIES, MEDICAL: See also under names of specific societies; list of societies at end of letter S
business manager appointed, S. C., 776
constituent, organization (report) 1361—OS
county, Buncombe County activities, N. C., 364
county, Dr. McCormick secretary 28 years, 272
county, Erie votes to bar alien physicians, N. Y., 1234
county, industrial health program, (Pa.) 140; (A. M. A. program) 259
county, Lake County (Fla.) opposes temporary licenses, 1234
county, Lake County (Ind.) Oberlin Award, 132—E
county, Mecklenburg N. C., honors its military members, 322
county, plan for medical care of strangers, San Francisco, 270
county, plan to examine high school boys, N. Y. C., 60
county, recording A. M. A. broadcasts for use of, 1228—OS
county, role in pneumonia control, Pa., [Donaldson] 113—ab
county, St. Joseph, publishes Service Bulletin, 202
meetings, age of physicians attending, N. Y., 60
members return part of fees to those in services, St. Louis, 532
night service, (Ohio) 60; (Indianapolis) 691
Plan: See Medical Service plans
Sociedad Mexicana a Dermatologia (officers elected) 365
Society for the Study of Asthma and Allied Conditions elections, 776
Society of Friends war work, 534
Society of Illinois Bacteriologists, (meeting) 531
state, committee on industrial professional relationships, Council discusses, 1229—OS
state, industrial health programs, 841—E; 1372—OS

SOCIETIES, MEDICAL—Continued
state meeting canceled, (Tenn.) 610; (Neb.) 960
state, secretaries' conference, (Mich.) 139; (Ind.) 271; (A. M. A. annual) 1362—OS
state, war participation committees, formation of, 136; (A. M. A. urges) 438
SODA, Baking: See Sodium bicarbonate
"Pop": See Beverages, carbonated
SODIUM alginate as syrup substitute, 196—E
Ascorbate, N. N. R., (Breon) 193
beta-glycerol-phosphate, effect on fracture healing, [Sperling] 76—ab
bicarbonate, prevents renal obstruction from sulfadiazine, [Fox & others] ★1147
bisulfite addition product of menadione, (Council report) 839
Chloride: See also Salt
chloride, dextrose in physiological solution of, N. N. R., (Readyflask), 593
chloride, isotonic solution of, N. N. R., (Pacific Coast Co.) 193; (Readyflask) 593
p, p'-diamino-diphenylsulfone-N, N' di-dextrose sulfonate (Promin) in tuberculosis, 765—E; 798
fluoride poisoning (acute) at State Hospital, [Liddeck & others] ★826
morrhuate, N. N. R., (Burroughs Wellcome) 945; (Breon) 945
Pentothal: See Pentothal Sodium
*di*Phenyl Hydantoinate: See Diphenylhydantoin Sodium
Salts of Sulfonamides: See Sulfonamides
sulfate with sulfanilamide, fatal poisoning, [Parodi] 708—ab
SOFT DRINKS: See Beverages, carbonated
SOIL Bacillus, Substance Obtained From: See Gramicidin
Removal of: See Detergents
SOLDIERS: See Army; Medicine and the War; World War II
Neurosis: See Asthenia, neurocirculatory
SOLUTION: See also under names of specific substances
SOMATIC Complaints: See Psychosomatic Medicine
SORBITOL, sugar substitute, A. M. A. Council statement, 1370—OS
SOUND: See Noise
SOUTH AMERICA: See also Inter-American; Latin American; Pan American; under name of specific republics as Argentine; Brazil; Chile
SOUTHERN, community, supply of physicians in; OWI release, 1158—E; 1162
Medical Association, (election; prize) 204
SOUTTAR, HENRY S., chairman on medical services for armed forces, India, 533
SOVIET-Anglo: See under England
Russia: See Russia
SOYBEAN preparation in liver cirrhosis, [Yater] 720—ab
SPACE: See Depth charges
SPANISH: See also Hispanic-American Medical Society
Civil War, cooling in shock, [Perry] 966—C
SPAS: See Health resorts
SPASMALGIN, antispasmodic action on colon, [Atkinson & others] ★648
SPECIALISTS: See also under names of specialists as Gynecologists; Pathologists
Army, University of Michigan to train, 437
Certification: See American Board of (examinations)
epidemic control, graduated, 1291
Medical Specialists Unit No. 110 from Cleveland Clinic sent to New Zealand, 1291
number of patients seen per week by, [Ciocco & Altman] ★596; Frame] 1109—C
tropical medicine, training, 55
utilization, in armed forces, [Lull] ★638; 678—E
SPECIALTIES: See also specific specialties as Obstetrics
instruction for U. S. Navy, 1358
training course, Army-Navy, [Dalton] ★633; [Diehl] ★635; 678—E
SPECTACLES: See Glasses
SPEECH: See Voice
SPEEDO Headache Powders, 69—BI
SPERMATOZOA, new syndrome characterized by aspermatogenesis, [Klinefelter] 152—ab; (correction) 548
SPHENOID SINUS, bullet lodged in, lead poisoning from; submucous resection to remove, [Futch] ★580
SPHINX'S (Dr.) Sarsaparilla and Iron with Iodide Potash, 69—BI
SPINAL ANESTHESIA: See Anesthesia
SPINAL CANAL, roentgen study in herniated intervertebral disk with iodized oil, [Hyndman & others] ★390
roentgenography (two needle oxygen) for visualizing subarachnoid space, [Munro] 464—ab
SPINAL CORD, abscess, neuromyelitis after antirabic treatment, [Frelle] 548—ab
Disease: See Encephalomyelitis; Meningoencephalitis; Poliomyelitis
Iodized poppyseed oil effect on, [Craig] 288—ab
stab wounds, widespread pigmentation later, [Jones] ★1004
toxic myelopathies after arsphenamine, [Lichtenstein] 287—ab
SPINAL FLUID: See Cerebrospinal Fluid
SPINAL MENINGITIS: See Meningitis, cerebrospinal epidemic
SPINAL PUNCTURE, Retan technic of drainage, [Retan] 71—C
SPINE: See also Back; Sacrum
curvature, anemia in kyphoscoliosis; hemorrhagic gastritis, [Reimann] 1312—ab
curvature in nephrectomized, [Kretschmer] ★477
intervertebral disk, herniated; lodized oil column study; procaine test, surgical and other treatment, [Hyndman & others] ★390
intervertebral disk rupture simulating coronary disease, [Semmes & Murphey] ★1209
intervertebral disks (protruded), decompression, spinal exploration, [Ecker] ★401
intervertebral disks, ruptured, diagnosis; treatment, [Dandy] 290—ab
pain (left costovertebral), cause of? 629
stretcher, Pandiculator, 537—BI
SPLEEN Enlarged: See Splenomegaly
Excision: See Splenectomy
Irradiate to control puberal bleeding; offspring normal, [Kaplan] ★1199
SPLENECTOMY for sclerous congestive splenomegaly, [Annes Dias] 547—ab
SPLENOMEGALY, etiology, chronic malaria or kala-azar? 91
sclerous congestive, splenectomy for, [Annes Dias] 547—ab
SPLINTS, drum, for gunshot fractures of hand, [Gusynin] ★952
simple, employing plywood, [Parcher] 217—ab
SPOROTRICHOSIS, prevalence, Conn., [Weise] 75—ab
SPORTS: See Athletics
SPRAINS, ski injuries, [Moritz] ★97
SPRUE syndrome, skin changes in, [Kaufman & Smith] ★168
SQUIBB'S *Medical Journal Abstracts*, for medical officers in service, 262—E
SQUIRRELS, fumigate burrow openings to control plague, [Stewart] 283—ab
rabies in, 1404
STAB wounds: See Wounds
STAINING, rickettsias, [Gracián Casado] 296—ab
Treponema, simple, rapid, reliable technic, [Perrín] 295—ab
STAMPS, Tax: See Tax
STANDARD Nomenclature of Disease and Operations: See American Medical Association
STANFORD University, (Dr. Tresidder chosen president) 446; (Liljencrantz Memorial Collection on Aviation Medicine) 774; (popular medical lectures) 959
STAPHYLOCOCCUS aureus, disinfectants action on, [Hoyt] 465—ab
aureus in human milk, [Duncan] 1181—ab
aureus infection, propamidine in, 946—E
aureus, sulfonamide fast, urea resensitization of, 680—E
food handling carriers, 1156—E
infection, antitoxin plus chemotherapy for, [Rigdon] 82—ab
infections, sulfadiazine efficacy and toxic effects, [Finland] 622—ab
Toxoid (Digest-Modified)-Lederle, (Council report) 193
STARCH eating and nutrition deficiency, 1250
STARE, nephritic, in chronic nephritis, [Hanes] ★1152
STARK, JOHN H., awarded distinguished flying cross, 446
STARK, WILLIAM, incident of Baillie and Hunter, [Holman, Moorman] 966—C
STARVATION of children in Greece, France, etc., 1104
sudden death in, [de Salamanca] 893—ab
STATE Board: See STATE BOARD; STATE BOARD REPORTS
Health Officers, Dept.: See Health
Hospitals: See Hospitals
institutions, Mrs. Dora Shaw Heffner named director, Calif., 530
Legislation: See Laws and Legislation
Medicine: See Medicine, state
Societies: See Societies, Medical
STATE BOARD: See also Licensure; Medical Practice Acts
Federation of State Boards (new officers), 693
STATE BOARD REPORTS
Arkansas, 213
California, 886; 975
Colorado, 214
District of Columbia, 619
Hawaii, 213
Indiana, 701
Maryland, 370
Michigan, 149
Minnesota, 455
Mississipi, 559
Missouri, 455
Montana, 369
Nebraska, 701
New York, 71; 148
Oklahoma, 619
Oregon, 282
Pennsylvania, 281
Rhode Island, 214
South Carolina, 213
Tennessee, 148; 213
STATE BOARD REPORTS—Continued
Vermont, 619
Virginia, 885
West Virginia, 539
Wyoming, 71
STATISTICS: See Hospitals; Vital Statistics
STATURE: See Body height
STATUS Lymphaticus: See Lymphatism
STEAM equipment (free flowing), sterilizing qualities, 551
radiators as possible carriers of infections, 985
STEAMSHIP: See Ships
STEATOMA, sebaceous cysts of chin, roentgen therapy, 552, (reply) [Whitmore] 1402
STEINBERG-Robb Method: See Roentgenography
STEINER (Lewis H.) Fund, bequest, 271
STENOGRAPHERS, medical, number in all hospitals, 1942, ★1020
STERIDOL to prevent dermatitis from cutting oils, 223
STERILE Uteroids, 453—BI
STERILITY (bacterial) of American made surgical catgut sutures, [Clock] 284—ab
STERILITY (sexual): See Eunuchoidism
Inducing: See Castration; Sterilization, Sexual
STERILIZATION, BACTERIAL: See also Antiseptics; Disinfectants; Fumigation
of Air: See Air Disinfection
of drinking water with potassium-citric acid-lactose tablet, [Violle] 1182—ab
of sulfanilamide powder, 1406
value of free flowing steam equipment, 551
STERILIZATION, SEXUAL: See also Castration; Eunuchoidism
of marriage partners, [Reimann-Hunziker] 893—ab
of men, increase under Hitler's rule, 525 (of "inferior" Norwegians) 953; 1360
STERN (Max), Heart Station, Ohio, 692
STEROID hormones, antifibromatogenic action, [Lipschütz] (correction) 694
STETHOSCOPE, used to detect feigned deafness, [Pitman] ★752
STIEGLITZ Lecture: See Lectures
STILBESTROL: See Diethylstilbestrol
STILLBIRTH, roentgen life test, [Dillon] 457—ab
STOMACH: See also Digestive System; Gastrointestinal Tract
acidity, achlorhydric hypochromic microcytic anemia in 8 year old, [Darle] 545—ab
acidity, acid factor in ulcer, [Berk] 215—ab
acidity, corrosive action in ulcer, [Boles] ★642
acidity, radium effect on, [Jenkins] 215—ab
air in, roentgen life test of stillborn, [Dillon] 457—ab
cancer, acute perforations, [García Barón] 295—ab
capillary vasoneurosis role in peptic ulcer, [Boles] ★642
Disorders: See also Indigestion
disorders, Grover Graham Remedy, 453—BI
disorders in great men, [Goldstein] 646—ab
disorders, under Hitler's rule, 524
Excision: See Stomach surgery
Gastroscopy: See also Stomach, tumors
gastroscopy, analysis, [Renshaw] 621—ab
gastroscopy in anacidity; gastritis; mucosa condition, [Christiansen] 982—ab
hemorrhagic gastritis; anemia in kyphoscoliosis; [Reimann] 1312—ab
of birds, source of data on food, 573—ab
mucosa, "gastritis" and ulcer, [Wolf] 1177—ab
pyloric canal as distinct region of, 962
roentgen behavior in pellagra: Casal's disease, [Díaz-Rubio] 86—ab
secretion of mucus, in peptic ulcer: Lenormand theory, 381
Surgery: See also Peptic Ulcer, surgical treatment
surgery, antral resection vs. partial fundusectomy, [Connell] 454—C
surgery, hypochromic anemia after resection, [Hemmeler] 377—ab
surgery, partial or subtotal gastrectomy, jejunal ulcers and hemorrhages after, [Nissen] 147—C
tumors, sarcoma, acute perforations, [García Barón] 295—ab
tumors, surgery and gastroscopy in, [Schindler] 81—ab
Ulcer: See Peptic Ulcer
STOOLS: See Feces
STRAIN: See Effort (cross reference); Exercise; Medicolegal Abstracts at end of letter M
STRANGERS, medical care, San Francisco plan, 270
STRAUB, RUTH M., awarded Legion of Merit, 686
STREPTOCOCCUS, hemolytic, bacteremia, [Rantz] 705—ab
hemolytic, gangrene; differentiating from undermining, burrowing, chronic ulcer, [Meleney] 37—ab
hemolytic, microaerophilic, infection (ulcers) causing destruction of nose, [Costello] ★36
hemolytic, septicemia, sulfonamides for, [Kanof & others] ★12

STREPTOCOCCUS—Continued
infection (air borne) irradiation, propylene glycol evaporation and, [Henle] 890—ab
infection (chronic), propamidine in, 946—E
infection, sulfonamides for, [Marshall] 545—ab
infection of upper respiratory tract and rheumatic fever closely related, [Ditkowsky & others] ★992
infection, sulfadiazine efficacy and toxic effects, [Finland] 622—ab
meningitis after cranio-cerebral trauma: sulfapyridine and sulfadiazine for, [Riley & Waugh] ★338
sore throat, outbreak in army camp, [Bloomfield & Rantz] ★315
ulcer, chronic, of skin, [Goodman] 38—ab
viridans endarteritis on patent ductus arteriosus, [Touroff] 78—ab
STREPTOTHRICIN, anti-infective agent, [Smith] 851—ab
STRETCHER, British method of blanketing, 1226
STRONGYLOIDES and eosinophilia, 796
STRONTIUM, radioactive, therapeutic use, 54—E; [Low-Beer] 706—ab
STRUMA: See Goiter
Riedel's: See Thyroiditis, chronic
STUDENTS: See also Children; Schools; Students, Medical; University
health, A. M. A. Committee on, 38—OS; (first meeting) 526—OS
intellectual workers and physical exercise for soldier-students, 516—E
loans, federal legislation on, 444—OS
Nurses: See Nurses
War Effort and: See Medicine and the War, students
STUDENTS, MEDICAL: See also Education, Medical; Interns; Schools, Medical
British Medical Students Association first meeting, 1104
coroner (Dr. Goddard) classes at the morgue for, 1222—E
diagnosis by; blind belief in laboratory data, 8—ab
Fellowships: See Fellowships
Fraternities: See Fraternities
loan fund (Shands Memorial) Mississippi, 1297
Russian, books for, 200
Scholarships: See Scholarships
Selective Service bulletin on, 131—E; 133
supply, (adequate and uninterrupted) necessary, [Diehl] ★836; 678—E
two roads are always open, 107—ab
Women: See also Physicians, women
women, England, 63
SUBARACHNOID Hemorrhage: See Meninges Hematoma; See Meninges hemorrhage
SUBMARINE chasers, kits for, 767
SUBMERSION: See Water
SUBMUCOUS Resection: See Nose septum
SUBPHRENIC Abscess: See Diaphragm
SUCCINYLSULFATHIAZOLE (sulfasuxidine), toxicity: agranulocytosis, leukopenia; liver extract prevents, [Spicer] 153—ab
treatment of bacillary dysentery, [Poth] 374—ab; [Smyth & others] 1244—ab; ★1325; 1353—E
SUCTION, blast effect due to externally applied pressure wave, [Williams] 376—ab
SUDECK'S Atrophy: See Osteoporosis, post-traumatic
SUFFOCATION, fatal smothering of infants by heavy blankets, 263—E
SUGAR: See also Carbohydrates; Dextrose; Lactose
absorption in rickets vs. vitamin D, [Laszt] 626—ab
cane waste, bagassosis from: industrial lung disease, [Castleden] 293—ab
consumption increase, 1909-1939, [Stiebeling] ★831; ★836
in Blood: See Blood sugar
in Urine: See Diabetes Mellitus; Glycosuria
questions of soda pop, soft drinks, sweets for workers, [Wilder] 869—ab
rationing conducive to health; saccharin and sorbitol as substitutes, Council statement, 1370—OS
rationing: Special Purpose Application, 1157—E
rationing; syrup substitutes, 196—E
U. S. Army aids North African natives, 265
SUGGARS, HAROLD J., x-ray pioneer, death, 1103
SUICIDES of physicians in 1942, 196—E
SULFASUXIDINE: See Succinylsulfathiazole
SULFBROMOPHTHALEIN (Bromsulphalein) Test: See Liver function tests
SULFADIAZINE, *tri*ethanolamine spray in otolaryngology, [Bordley] 978—ab
in simple mastoidectomy wounds, [Tucker] 1112—ab
number of lbs. produced and used in 1941; relative toxicity, [Long] 312—ab
sodium salt of, clinical use by hypodermoclysis, [Taplin & others] ★313
sodium salts of, local use in wounds, [Fox] 216—ab
SULFADIAZNE—Continued
toxicity, [Flippin & others] ★233; ★234; [Dowling & Lepper] ★1190
toxicity, renal obstruction, value of urine *pH*; use sodium bicarbonate, [Fox & others] ★1147
Treatment: See also Burns; Gangrene, gas; Gonorrhea; Meningitis; Pneumonia
treatment, efficacy; toxic effects, [Finland] 622—ab
treatment, ion transfer in cornea pyocyaneus infection, [von Sallmann] 284—ab
treatment, local, spray in burns, [Coloviras] 459—ab
treatment orally plus sulfanilamide locally for wound infection, [Long] ★303
tuberculosis (experimental) and, 763—E
SULFAGUANIDINE, intestinal antiseptic, [Vieta] 703—ab
toxicity, agranulocytosis and leukopenia, liver extract prevents, [Spicer] 153—ab
Treatment: See Dysentery, bacillary
SULFANILAMIDE, absorption (local), [Hodgson] 84—ab
added to talcum powder in rubber gloves, 714
aqueous, for war wounds, [Hawking] 466—ab
gauze packing in cigaret drain to introduce into peritoneal cavity, [Wise] ★666
N.N.R., (Horton & Converse) 193; (Squibb) 677
procaine antagonistic to [de Waal] 1113—ab
sterilization of, powder, technic, 1406
toxicity, fatal, N. Y., [Sutliff & others] ★307
toxicity, fatal sulfanilamide with sodium sulfate, [Frodl] 708—ab
Treatment: See also Cholera: Gangrene, gas; Oviducts Inflammation
treatment, local, in trachoma, [Morate] 893—ab
treatment, local, of burns with eschars, [Andrus] 978—ab
treatment, locally, plus sulfadiazine orally for wound infection, [Long] ★303
treatment of burns with paraffin and, 300
treatment of wounds, closure with cotton or catgut sutures, [Cannaday] 307—ab
treatment, use during cesarean section, 66
2-SULFANILAMIDOPYRIMIDINE: See Sulfadiazine
SULFANILYLGUANIDINE: See Sulfaguanidine
SULFARIDINE, number of lbs. used in 1941; relative toxicity, [Long] 312—ab
sodium salt of, use by hypodermoclysis, [Taplin & others] ★313
toxic reactions, [Flippin & others] ★233; ★234; [Dowling & Lepper] ★1190
toxicity, fatal, N. Y., [Sutliff & others] ★307
Treatment: See Asthma; Dysentery, bacillary; Meningitis, streptococcic; Pneumonia; Wounds, infected
SULFATHIAZOLE, microcrystalline, for war wounds, [Hawking] 466—ab
microcrystalline in aqueous suspension in impetigo contagiosa, [Harris] ★403
N. N. R. (Drug Products), 839
number of pounds produced and used in 1941; relative toxicity, [Long] 312—ab
preoperative use, [Colston] 217—ab
oral use to prevent gonorrhea and chancroid, [Loveless & Denton] ★827
sodium salt of, by hypodermoclysis, [Taplin & others] ★313
sodium salts of, local use in wounds, [Fox] 216—ab
sodium salts of, oral use, (Council report) ★1008
sodium, stability of solution, 382
Succinyl-: See Succinylsulfathiazole
toxicity, [Flippin & others] ★233; ★234; [Dowling & Lepper] ★1190
toxicity, fatal, N. Y., [Sutliff & others] ★307
toxicity, fever and chills due to, [Moeschlin] 157—ab
toxicity, hypersensitivity (eruption) from topical use in varicose eczema, [Cohen & others] ★408
toxicity, hypersensitivity to ointment, [Weiner] ★41
toxicity, sensitization reaction to successive local and oral therapy in eczematous pyoderma, [Livingood & Pillsbury] ★406
Treatment: See also Arthritis, gonococcic; Chancroid; Dysentery, bacillary; Gangrene, gas; Gonorrhea; Ovaducts Inflammation; Pneumonia; Wounds, infected
treatment, combined with fever for gonorrhea, [Ferguson] 786—ab
treatment of wounds, closure with cotton or catgut sutures, [Cannaday] 307—ab
-urea combination, urea resensitization of bacteria, 680—E
SULFO-BATH, 69—BI
SULFONAMIDE COMPOUNDS, activity compared, [Marshall] 543—ab
azosulfamide (neoprontosil) toxicity, fatal, N. Y., [Sutliff & others] ★307
distribution (free), sputum specimen not required, Illinois, 530
film ("new skin") as surgical dressing, [Pickrell] 375—ab
SULFONAMIDE COMPOUNDS—Continued
metric instead of apothecary system in Council publications, 839
ointments for tetanus, gas gangrene and burns, [Long] 307—ab
peritoneal response to, [Throckmorton] 1180—ab
prevention and treatment of wound infection; principles governing, [Long] ★303; [Smith] 851—ab
prevention of rheumatic recrudescences in children, prolonged use [Hansen] 621—ab
procaine hydrochloride antagonism, [de Waal] 1113—ab; [Legge] 1113—ab
sensitization, [Erskine] 625—ab
sodium salts of, local use in wounds, [Fox] 216—ab
sodium salts of, orally, status, (Council report) ★1008
Sulfadiazine: See Sulfadiazine
Sulfaguanidine: See Sulfaguanidine
Sulfanilamide: See Sulfanilamide
Sulfapyridine: See Sulfapyridine
Sulfathiazole: See Sulfathiazole
toxicity as cause of death, New York City 1941, [Sutliff & others] ★307
toxicity, neurotoxic action, [Puhr] 467—ab
toxicity, thrombopenic purpura, [Losada L.] 220—ab
Treatment: See also Anthrax; Conjunctivitis, gonococcic; Endocarditis; Meningitis; Pneumonia; Throat, sore
treatment, Lederle Laboratories motion picture, 364
treatment, local, of burns, [Rhoads] 81—ab
treatment of childhood sepsis, [Kanof & others] ★11
treatment of infants, [del Carril] 468—ab
treatment of otitic meningitis before and after sulfonamide era, [Williams] 462—ab
treatment, plasma carbohydrate and hepatic function during, [Kapnick] 790—ab
treatment plus *tri*ethanolamine for burns, [Skinner] 1178—ab
treatment plus serum in cerebrospinal fever, 516—E
treatment, resistance in gonorrhea [Petro] 1416—ab
treatment, routine, for colds to prevent pneumonia? 1185
urea resensitization of sulfonamide fast bacteria, 680—E
use in surgery, [Waas] 374—ab
SULFONATED castor oil in cleanser to prevent cable rash, [Morris & Tabershaw] ★192
SULFONE compounds for pulmonary tuberculosis, 763—E; 798
SULFUR: See also Acid, sulfuric
dioxide, dangers to refrigerator worker, 302
hazard of wettable also lime sulfur for mites in citrus groves, 91
SUN VALLEY, ski injuries, [Moritz] ★97
SUNBURN, reactions; treatment suggested (lotions and creams), (Council report) ★514
SUNLIGHT areas of Guatemala, vitamin D for children in, 162
carcinoma, 1285—E
injurious effect; also protective ointments, (Council report), ★513; ★514
Sensitivity to: See Light, sensitivity
SUPERIOR Sulcus Tumors: See Lungs, tumors
SUPPORTIVE Formula S.G.M.a, 280—BI
SUPPOSITORIES: See Vaginal suppositories
SUPPURATION: See Abscess; Carbuncle; Hidradenitis; Otitis Media; Ulcers
SUPRARENALS: See Adrenals
SURGEONS, American College of, (cooperate in planning "items" for camp hospitals) 135; (motion picture on registered nurse) 204; (plan 20 war sessions) 694; (hospitals approved by) ★1010; (cooperative training of physicians in and out of armed forces) 1228—OS; 1399—OS
contract, wanted at army operated industrial plants and depots, 1095
Flight: See Aviation
great, what makes, 903—ab
Industrial: See Industrial Health
International College of, (4th assembly) 1405
Orthopedic: See Orthopedics
patient load, [Ciocco & Altman] ★509; ★510; ★512; [Frame] 1109—C
Pirogoff (N. I.) great army surgeon, 1325—ab
Royal College of, (meeting place for American and Canadian medical officers) 143; (national collection of war injuries) 695
SURGERY: See also Amputation; Sterilization, Bacterial; under names of specific diseases and organs
amino acids use in surgical cases, [Altshuler & others] ★163
Anesthesia in: See Anesthesia
Argentine Congress of, 14th, 450
Asociación Congresos de Cirugía, 208
blood plasma protein variation in, [Casten] 1247—ab
early rising after amputation to prevent embolism, [Samuels] 700—C
Industrial: See Industrial Health

SURGERY—Continued
Instruments: See Instruments
Inter-American Congress of, 66; 450
International Society of, reorganized, 62, *Journal of Oral Surgery*, 611
liver deaths, concept of, [Heyd] ★736
Neurologic: See Neurology
operations after 65, [Busby] ★48
Orthopedic: See Orthopedics
percent of population operated on, by states, ★1009; ★1018
plastic, Latin American Congress of, (2nd) 450
plastic, repair of cranial defects with tantalum, etc., [Pudenz] ★478; [Fulcher] ★931
Postoperative complications: See Chylothorax; Embolism, pulmonary; Hiccup; Thrombosis, pulmonary
postoperative nitrogen loss, 346—E
preoperative use of sulfathiazole, [Colston] 217—ab
relaxing incision; new type, [Harkins] 1247—ab
San Francisco Surgical Society essay contest, 270
special, general hospitals designated for, 1095
STANDARD NOMENCLATURE OF OPERATIONS, [Jordan] ★1001; (used by hospitals) ★1026
sulfonamides use in, [Waas] 374—ab
Suture: See Suture
War: See also Medicine and the War; World War II
war, abdominal, of "total war," [Gordon-Taylor] 981—ab
Wounds from: See Wounds, surgical
SURGICAL Gloves: See Rubber Gloves
Gut: See Catgut
SUTTER, LeROY M., cited for bravery, 766
SUTURE, allergy to catgut and adhesions, [Vaccaro] 982—ab
cotton vs. catgut, relation to infection, [Cannaday] 307—ab
nylon, 1292
sterility of American made surgical catgut sutures, [Clock] 284—ab
SWALLOWING Air: See Aerophagia
dysphagia, decompress chest by removing ribs, [Newton] 789—ab
SWAN, RUSSELL H. J., death, 1103
SWEAT, green, green discoloration between toes, 300
hyperhidrosis of feet, 796
SWEAT GLANDS, hidradenitis suppurativa, low fat diet and thyroxin for, [Sutton & Marks] ★1344
SWELLING: See Edema
SWETT, FRANCIS H., death, 877
SWIMMING: See also Drowning
heart response to cold water, [Tuttle] 705—ab
SWINDLERS: See Impostors
SWINE: See Hogs
SWISS food rationing, 1237
Society of Pediatrics, 1237
SYCOSIS vulgaris, treatment with ultraviolet rays, (Council report) ★127
SYMPATHETIC Nervous System: See Nervous System, Sympathetic
SYNCOPE, Carotid Sinus: See Carotid Sinus in blood donors, [Poles] 546—ab
pleural reflex, in pneumothorax, [Ormond] 790—ab
SYNEX, 280—BI
SYN-O-SCOPE, 280—BI
SYRINGOMYELIA with recurrent big ulcers, 1316
SYNTROPAN, antispasmodic action on colon, [Atkinson & others] ★648
SYPHILIS: See also Venereal Disease; and under specific organ or disease affected
Cardiovascular: See Aortitis, syphilitic
Cerebrospinal: See Neurosyphilis
congenital, mapharsen intramuscularly, [Astrachan & Cornell] ★746
congenital, or erythroblastosis, [Henderson] 218—ab
Diagnosis: See also Syphilis, serodiagnosis
diagnosis of secondary lesions with darkfield microscope, [Agee] 1179—ab
in Pregnancy: See Pregnancy
in Recruits: See Medicine and the War, venereal disease
Incidence, in criminals, Brazil, 366
incidence in multiple sclerosis, 551
late osseous, treatment, 552
late, positive Wassermann in, 299
Neurosyphilis: See Neurosyphilis
Serodiagnosis: See also Wassermann Test
serodiagnosis, biologically false tests, 224
serodiagnosis in donors; if positive notified by hospital, [Frye & others] ★182
serodiagnosis, tests of employees, Omaha, 609
treatment, mapharsen intramuscularly [Astrachan & Cornell] ★746
treatment, mapharsen, multiple injections, arsenic in blood, [Siegel] 458—ab
treatment resistant, [Beerman] 77—ab
vitamin therapy in, [O'Leary] 151—ab
SYPHILOLOGY, Asociación Argentina, 208
SYRINGE type packages of biologic products no longer available, 138
SYRINGOMYELIA, recurrent ulcers of leg, 1316
SYRUP substitutes, 196—E

SOCIETIES AND OTHER ORGANIZATIONS

Acad.—Academy
Am.—American
A.—Association
Coll.—College
Conf.—Conference
Congr.—Congress
Conv.—Convention
Dist.—District
Hosp.—Hospital
Internat.—International
M.—Medical
Med.—Medicine
Nat.—National
Pharm.—Pharmaceutical
Phys.—Physicians
Rev.—Revision
Ry.—Railways
Soc.—Society
Surg.—Surgery
Surgs.—Surgeons
S.—Surgical

Alabama, M. A. of the State of, 774, 1100
Alcoholic Consultation Bureau, 447
Allegheny County (Pa.) M. Soc., 61, 448, 1103
Alpha Kappa Kappa Fraternity, XI, Nu and Eta chapters, 875
Am. Acad. of Ophthalmology and Otolaryngology, 59, 878
Am. Acad. of Orthopaedic Surgs., 141, 611
Am. Acad. of Pediatrics, 62, 272
Am. A. for the Advancement of Science, 204, 365, 530, 1405
Am. A. for the Study of Allergy, 1405
Am. A. for the Study of Goiter, 141, 776
Am. A. of Anatomists, 363, 530, 961
Am. A. of Cereal Chemists, 1234
Am. A. of Immunologists, 531
Am. A. of Industrial Phys. and Surgs., 878
Am. A. of M. Social Workers, 1403
Am. A. of Obstetricians, Gynecologists and Abdominal Surgs., 448
Am. A. of Pathologists and Bacteriologists, 448
Am. A. on Mental Deficiency; Northeastern Section, 139
Am. Board of Internal Med., 141
Am. Board of Neurological Surg., 272
Am. Board of Obstetrics and Gynecology, 62, 693
Am. Board of Ophthalmology, 693
Am. Board of Orthopaedic Surg., 961
Am. Board of Otolaryngology, 448
Am. Board of Pathology, 141
Am. Board of Psychiatry and Neurology, 272
Am. Chemical Soc., 1236; Chicago Section, 611, 875; Pittsburgh Section, 877
Am. Coll. of Chest Phys., 776
Am. Coll. of Phys., 1101
Am. Coll. of Surgs., 204, 531, 691, 694
Am. Dental A., 611, 1102, 1171
Am. Diabetes A., 1103
Am. Foundation for Tropical Med., 693
Am. Hosp. A., 141, 611, 878, 1103
Am. Industrial Hygiene A., 878; Chicago Chapter, 139
Am. Institute of Baking, 961
Am. Institute of Nutrition, 295
Am. Institute of Public Opinion, 693
Am. Laryngological, Rhinological and Otological Soc.; Eastern, Middle, Southern and Western sections, 141
Am. Life Convention, 611
Am. Neurological A., 774
Am. Orthopsychiatric A., 448
Am. Orthoptic Council, 878
Am. Pharm. Manufacturers' A., 272
Am. Physiological Soc., 205
Am. Physiotherapy A., 270, 449
Am. Prison A., 141
Am. Psychiatric A., 272, 447
Am. Public Health A., 878, 1298
Am. Red Cross, 364, 961; Denver Chapter, 1100; Eastern Area, 878; M. and Health Advisory Committee, 1171; Midwestern Area, 776
Am. Registry of Physical Therapy Technicians, 270
Am. Social Hygiene A., 611
Am. Soc. for Clinical Investigation, 1236
Am. Soc. for Experimental Pathology, 205, 531
Am. Soc. for Pharmacology and Experimental Therapeutics, 205, 966
Am. Soc. for the Control of Cancer, 363; Women's Field Army, 1171; Del. State Committee, 59
Am. Soc. of Biological Chemists, 205
Am. Soc. of Clinical Pathologists, 693
Am. Soc. of Immunologists, 205
Am. Soc. of Tropical Med., 364, 1170
Am. Soc. of Zoologists, 530
Am. Standards A., 1171
Am. Trudeau Soc., 1405
Am. Urological A., 611, 776
Am. Women's Voluntary Services in New York, 609
Arizona State M. A., 1234
Arkansas M. Soc., 1169
Asociacion Medica Argentina, 1234; Sociedad Argentina de biologia of the, 775
A. for the Advancement of Psychotherapy 203, 611
A. for the Study of Internal Secretions, 271, 530
A. of Am. M. Colleges, 362, 449, 533, 1171
A. of Am. Phys., 1236
A. of Argentinian Dermatologists and Syphilologists, 1405
A. of Canadian Advertisers, 777
A. of Internes and M. Students, 1236
A. of Records Librarians of Texas, 364
A. of Scientific Workers in Great Britain, 612
Baltimore Mobilization Committee, 876
Baltimore Venereal Disease Council, 876
Barlow Soc. for the History of Med., 1296
Becton Dickinson Foundation for the Extension of Scientific Knowledge, 204
Begg Soc., 775
Boston University Student Defense Board, 59
British M. A., 272, 533, 1103
British Physiological Soc., 203
Brooklyn, Acad. of Med. of, 960
Brooklyn, Doctors Musical Soc. of, 1234
Buenos Aires, Acad. of the History of Med. at the University of, 1103
Buenos Aires, Institute of Nutrition at, 1103
Buffalo Dist. Committee for Industrial Health, 1101
Buncombe County (N. C.) M. Soc., 364
California Acad. of Med., 959
California Board of M. Examiners, 269, 1169
California Heart A., 1403
California Historical Soc., 959
California M. A., 269, 446, 690, 774, 1298
California Soc. of Mental Hygiene, 1296
California State Personnel Board, 690
Canada, Health League of, 1298
Canadian M. A., 1236, 1298
Carnegie Institution of Washington, 362, 446
Catholic Hosp. A., 1405
Central Mississippi M. Soc., 1101
Central Neuropsychiatric A., 1103
Chicago Cancer Committee, 531, 1403
Chicago Conf. on the Health of Industrial Workers, 139
Chicago Heart A., 608
Chicago Industrial Nurses' Club, 139
Chicago Institute for Psychoanalysis, 59
Chicago, Institute of Med. of, 202, 269, 690, 1169
Chicago Laryngological and Otological Soc., 59
Chicago M. Soc., 139; North Side Branch, 202; North Shore Branch, 59, 362; North Suburban, South Chicago and South Side, Northwest, Douglas Park, Jackson Park, West Side, Englewood and Stock Yards, Aux Plaines and Calumet branches, 362
Chicago Pathological Soc., 269
Chicago Psychoanalytic Soc., 59
Chicago Soc. of Industrial Med. and Surg., 139
Chicago Urological Soc., 606
Chicago, Visiting Nurse A. of, 531
Children's Fund of Michigan, 203
Children's Hosp. Research Foundation of the University of Cincinnati, 449
Children's Tumor Registry, 272
Child Study A. of America, 692
Chile, First Nat. Cong. of Med. of, 365
Cinchona Products Institute of New York, 878
Cincinnati and Hamilton County (Ohio), Anti-Tuberculosis League of, 447
Cleveland, Acad. of Med. of, 204, 1102
Cleveland Clinic Foundation, 61
Cleveland Dental Soc., 1102
Cleveland Health Museum, 204, 271
Cleveland Hosp. Service A., 204
Cleveland M. Service A., 204
Clinical Orthopaedic Soc., 141
Colorado Soc. for the Control of Cancer, 269
Colorado, State Board of M. Examiners of, 608
Colorado State M. Soc., 530
Columbia County (N. Y.) M. Soc., 270
Commission of Phys'. Health of the Philadelphia County M. Soc., 1235
Commonwealth Fund of New York, 61, 612
Community Service Soc. of New York, 609
Conf. of State and Provincial Health Authorities of North America, 961
Connecticut Hosp. A., 1403
Connecticut Occupational Therapy A., 1403
Connecticut State M. Soc., 139, 1403; Women's M. Soc., 1403
Connecticut Tuberculosis A., 139
Contin Soc., 203
Cortland County (N. Y.) M. Soc., 270, 775, 1404
Cosmopolitan Club, 608
Cummings Foundation, 139
De Lamar Institute of Public Health, 363
Delaware, M. Council of, 1100
Delaware, M. Soc. of, 202
Denison Scientific A., 204
Denison University Research Foundation, 204
Denver, M. Soc. of the City and County of, 1100
Detroit Library Commission, 532
Detroit Orthopaedic Clinic, 139
Detroit Pediatric Soc., 203
Dist. of Columbia, M. Soc. of the, 139, 362, 608, 774
Dist. of Columbia Occupational Therapy A., 608
Distributing Center for Parasitological Specimens, 1171
Dorchester (Mass.) M. Soc., 959
Ella Sachs Plotz Foundation for the Advancement of Scientific Investigation, 365
Erie County (N. Y.) M. Soc., 1234
Erie County (Pa.) Health and Tuberculosis A., 271
Essex County (N. J.) Anatomical and Pathological Soc., 876
Fayette County (Ohio) M. Soc., 532; (Pa.), 1235
Federation for the Support of Jewish Philanthropic Societies of New York City, 692
Federation of Am. Societies of Experimental Biology, 205
Federation of State M. Boards, 693
Finlay Institute of Havana, 365

Societies—Continued
Florida M. A., 1169
Foundation for the Study of Cycles, 776
Fox River Valley Manufacturers' A., 1100
Fulton County (Ga.) M. Soc., 446
Genesee County (Mich.) M. Soc., 139
George Williams Hooper Foundation for M. Research, 449
Georgia, Associated Industries of, 1169
Georgia, M. A. of 1169; Woman's Auxiliary, 446
Georgia Pediatric Soc., 59
Georgia Warm Springs Foundation, 449, 1103
Goodwill Industries, 609, 875
Greater New York Hosp. A., 1102
Green Bay (Wis.) A. of Commerce, 878
Hartford Tuberculosis and Public Health Soc., 1100
Hawaii Territorial M. A., 1298
Hawaii Territorial Soc. for Mental Hygiene, 1298
Henry Phipps Institute, 448
Hewlett Club, 774
Hispanic-Am. M. Soc., 960
Hosp. Bureau of Standards and Supplies, 1171
Idaho State Board of M. Examiners, 774
Illinois Defense Council, 59
Illinois, Industrial Commission of, 608
Illinois Institute for Psychoanalysis, 269
Illinois Manufacturers' A., 139
Illinois Neuropsychiatric Institute, 272
Illinois Public Health A., 1403
Illinois Soc. for Mental Hygiene, 1296
Indiana Roentgen Soc., 202
Indiana's Emergency Educational Plan in Industrial Health, 531
Indiana State Board of M. Registration and Examiners, 362, 608
Indiana State M. A., 270, 531
Indianapolis Acad. of Ophthalmology and Otolaryngology, 1100
Indianapolis M. Soc., 202, 691
Industrial Hygiene Foundation, 449, 1103
Institute for Education by Radio, 1297
Institute of Aeronautical Sciences, 272
Institute of M. Research, 1235
Institute on the Exceptional Child, 610
Internat. Coll. of Surgs., 1405
Internat. Soc. of Surg., 62
Inter-State Postgraduate M. A. of North America, 1404
Iowa Anesthesiological Soc., 875
Iowa Public Health A., 875, 1403
Iowa Serum-Plasma Center, 1403
Iowa State M. Soc., 875
Iowa, State Soc. of M. Women, 875
John and Mary R. Markle Foundation, 449, 533
Josiah Macy Jr. Foundation, 270
Kane County (Ill.) M. Soc., 1100
Kankakee County (Ill.) M. Soc., 959
Kansas State Board of M. Registration and Examination, 531
Kennebec County (Me.) M. A., 446
Kentucky State M. A., 1169
King County (Wash.) M. Soc., 448, 960
Kings (N.Y.) M. Soc. of the County of, 60, 960, 1170
Kungl. Vetenskaps-Societeten (Royal Soc. of Sciences) of Uppsala, Sweden, 609
Lake County (Fla.) M. Soc., 1234
Lancaster City and County (Pa.) M. Soc., 140
La Porte County (Ind.) M. Soc., 202
La Salle County (Ill.) M. Soc., 1403
Latin Am. Acad. of Neurology, Psychiatry and Legal Med., 1103
Livingston County (Ill.) M. Soc., 875
Los Angeles County Civil Service Commission, 269, 530, 774
Los Angeles Neurological Soc., 774
Los Angeles Psychiatric Service, 959
Madison County (Ill.) M. Soc., 875
Madison County (N.Y.) M. Soc., 609
Maryland, M. and Chirurgical Faculty of the State of, 1297
Massachusetts Hosp. A., 203
Massachusetts M. Soc., 691, 959
Massachusetts Public Health A., 1169
Maternity Center A., 692
M. Correction A., 141
M. Federation of Chile, 141
M. Research Council, London, 533
M. Service Plans Council, 1298
Mellon Institute, 449
Menninger Foundation, 1298
Metropolitan Life Insurance Company, 611, 878
Michigan Soc. for Mental Hygiene, 1296
Michigan Soc. of Neurology and Psychiatry, 876
Michigan State Hosp. Commission, 203
Michigan State M. Soc., 139, 532, 876, 1170
Milbank Memorial Fund, 609
Milwaukee County, M. Soc. of, 364
Minneapolis Civilian Defense Council, 876
Minnesota Soc. of Internal Med., 203
Minnesota State Board of M. Examiners, 609
Missouri State M. A., 1170
Missouri Tuberculosis A., 59, 532
Monroe (N.Y.), M. Soc. of the County of, 1102
Montgomery County (Ohio) M. Soc., 60
Morris County (N.J.) M. Soc., 60
Mount Powell County (Mont.) M. Soc., 876
Nat. Acad. of Sciences, 1405
Nat. Committee for Mental Hygiene, 777
Nat. Conf. of Governmental Industrial Hygienists, 878
Nat. Conf. of Tuberculosis Secretaries, 1405
Nat. Conf. on M. Service, 448
Nat. Drug Company, 271
Nat. Foundation for Infantile Paralysis, 270, 271, 449; Albany County (N. Y.) Chapter, 60; New Jersey Chapter, 447
Nat. Health Advisory Council, 693
Nat. Hygiene Museum, 271
Nat. Noise Abatement Council, 612
Nat. Organization for Public Health Nursing of New York, 449
Nat. Research Council, 609, 777, 1171; Committee for Research in Endocrinology, 205
Nat. Safety Council, 271, 272, 694
Nat. Soc. for Crippled Children, 1103
Nat. Soc. for the Prevention of Blindness, 140
Nat. Tuberculosis A., 1405
Naval M. Research Institute, 875
Nebraska State M. A., 140, 960
Neuro-Psychiatric Institute of the Hartford Retreat, 1296
Nevada State M. A., 1234
Newcastle County (Del.) M. Soc., 690
New Jersey, Acad. of Med. of Northern, 691, 876
New Jersey Board of Pharmacy, 532
New Jersey, M. Soc. of, 691, 775
New Orleans Graduate M. Assembly, 691
New Orleans Neuropsychiatric Club, 775
New York Acad. of Med., 60, 270, 609, 692, 877; Inter-Am. Division, 62
New York, Associated Hosp. Service of, 140
New York City Hosp., Alumni Soc. of, 270
New York, Community Service Soc. of, 692
New York Dental Soc., Seventh Dist., 692
New York Heart A., 1404
New York, M. Soc. of the State of, 60, 363, 1101, 1102, 1404
New York Rheumatism A., 532
New York, Soc. of, 60
New York State Associated Industries, 878
New York, State Charities Aid A. of, 447
New York State Public Welfare Council, 60
New York, Tumor Clinic A. of the State of, 1102
New York Urban League, 692
New York Zoological Soc., 877
Northampton County (Pa.) M. Soc., 693
North Carolina Acad. of Public Health, 610
North Carolina Tuberculosis A., 1297
Northern Tri-State M. A., 959
Nuffield Foundation, 777
Nutrition Foundation, 140, 1171, 1298
Ohio State Dental Soc., 1102
Ohio State M. A., 610, 877, 960
Oklahoma State M. A., 61, 692, 877, 1404
Omaha-Douglas County M. Soc., 609
Omaha Mid-West Clinical Soc., 609
Onondaga County (N.Y.) M. Soc., 60, 775, 1404
Oxford County (Me.) M. Soc., 446
Pacific Coast Oto-Ophthalmological Soc., 1103
Pan. Am. Cong. of Endocrinology, 1103
Pan Am. Cong. of Ophthalmology, 878
Passaic County (N.J.) M. Soc., 60
Pennsylvania Tuberculosis Soc., 140
Penobscot County (Me.) M. A., 446
Peruvian Soc. of Pediatrics, 205
Phi Beta Pi, 875
Phi Gamma Delta, 530
Philadelphia, Associated Hosp. Service of, 610
Philadelphia A. of Retail Druggists, 1405
Philadelphia Coll. of Phys., 1235
Philadelphia County M. Soc., 61, 448, 610, 1102, 1235
Philadelphia Health A., 1235
Philadelphia Tuberculosis and Health A., 140
Philadelphia, Zoological Soc. of, 1235
Pima County (Ariz.) M. Soc., 875
Piscataquis County (Me.) M. A., 446
Pittsburgh Acad. of Med., 448
Pittsburgh S. Soc., 1235
Planned Parenthood Federation of America, 448, 692
Prince Georges County (Md.) M. Soc., 139
Providence M. A., 610
Raleigh (N.C.) Citizens Defense Corps, 447
Reading (Pa.) Eye, Ear, Nose and Throat Soc., 610, 1235
Registry of M. Technologists, 693
Research Council on Problems of Alcohol, 365, 447
Rhode Island M. Soc., 364, 610
Rhode Island State Dental Soc., 610
Rio de Janeiro Nat. Cancer Service, 364
Rochester (N.Y.) Acad. of Med., 1101
Rochester (N.Y.) Dental Soc., 692
Rockefeller Institute for M. Research, 202, 609
Royal Acad. of Med. of Barcelona, 365
Royal Coll. of Phys., Edinburgh, 205, 365
Royal Coll. of Phys., London, 1103
Royal Institution of London, 365
Royal Medico-Psychological A., 777
Royal Soc. of London, 365
Royal Soc. (London) of Med., 777
Royal Soc. (Canada) of Med., 205
Russian War Relief, 447
St. Louis M. Soc., 203
St. Louis Ophthalmic Soc., 532
San Bernardino County (Calif.) M. Soc., 690
San Francisco County M. Soc., 269
San Francisco S. Soc., 269
Science Service, 204
Science Talent Institute, 777
Seaboard M. A., 611
Sedgwick County (Kan.) M. Soc., 202, 531
Silver Bow County (Mont.) M. Soc., 876
Smith-Reed-Russell Soc., 608
Sociedad de Medicina de Montevideo, Uruguay, 775
Sociedad Mexicana a Dermatologia of Mexico City, 365
Sociedad Peruvana de Pediatria, 205
Soc. for the Study of Asthma and Allied Conditions, 776
Soc. of Am. Bacteriologists, 531, North Central Branch, 531
Soc. of Experimental Biology and Med., 363, 530
Soc. of Illinois Bacteriologists, 531
Soc. of M. Record Librarians, Conn., 1403
Soc. of Sigma Xi, Iowa State Coll. Branch of the, 531
South Carolina M. A., 776
Southeastern S. Cong., 1101
Southern Conf., 776
Southern M. A., 204
Spencer County (Ind.) M. Soc., 202
Squibb Institute for M. Research, 533
Stamford (Conn.) M. Soc., 139
Summit County (Ohio) M. Soc., 271
Swedish M. Soc. of Stockholm, 365
Syracuse (N. Y.) Acad. of Med., 60, 775
Tennessee State M. A., 610
Texas A. of Hosp. Accountants, 364
Texas A. of Nurse Anesthetists, 364
Texas Hosp. A., 364
Texas League for Planned Parenthood, 532
Texas Radiological Soc., 204
Texas, State M. A. of, 1403
Tompkins County (N. Y.) M. Soc., 532, 692
Topeka (Kan.) Institute for Psychoanalysis, 1100
Tri-State M. A. of the Carolinas and Virginia, 271
Tuberculosis Institute of Chicago and Cook County, 1100
Tufts M. Alumni A., 876
Tuskegee Institute, 774
United China Relief, 62
Uruguayan Pediatric Soc., 533
Virginia, M. Soc. of, 960
Walla Walla Valley (Wash.) M. Soc., 448, 960
War Production Fund to Conserve Manpower, 271
Washington County (Pa.) M. Soc., 610
Wayne County (Mich.) M. Soc., 203, 532, 691
Western A. of Industrial Phys. and Surgs., 1102, 1103
Westmoreland County (Pa.) M. Soc., 693
West Virginia, Public Health Council of, 611, 776, 1235
West Virginia State M. A., 611, 776, 1102
White House Conf. on Children in a Democracy, Nat. Citizens and Federal Interagency Committees, 533
Will-Grundy County (Ill.) M. Soc., 959
William Harvey Soc., 775
Wisconsin Acad. of Surg., 878
Yale (Conn.) M. Soc., 139

T

TNT: See Nitrotoluene (*tri*)
TACHYCARDIA, paroxysmal auricular, metrazol in, [Boyd] 791—ab
paroxysmal, prognosis of, [Cooke] 545—ab
treatment, urea and antipyrine plus quinidine intramuscularly, [Sturnick & others] *917
TACHYSTEROL, dihydro: See Dihydrotachysterol
TAENIA in dogs and cats, 713
TAKATA-Ara test in heart disease, [Chávez & others] *1279
TALCUM powder, sulfanilamide added to, in rubber gloves, 714
intraperitoneal granulomas from, [Seelig] 1304—C
TALLNESS: See Body height
TANTALUM implant to repair cranial defects, [Pudenz] *478; [Fulcher] *931
TAPE, Scotch Tape Diagnosis: See Oxyuriasis
TAPEWORM in dogs and cats, 713
TAX: See also Medicolegal Abstracts at end of letter M
income, federal physicians, (Bureau report) 353—OS; (outstanding accounts) 444—OS; 1377—OS
stamps, A. M. A. resolution on certified check to purchase, (Bureau report) 1376—OS
victory, 354—OS; 444—OS; (return and payment) 1231—OS; 1377—OS
TEA, sassafras, substituted for coffee, 986
U. S. Army aids North African natives, 265
TECHNICIANS: See also Laboratories; Occupational Therapy; Physical Therapy
medical, rationing of, Germany, 524
number in all hospitals, 1942, *1020
Registry of Medical Technologists, 693; [Holmblad] *821; *822
Schools Approved by A. M. A. for: See Laboratories; Occupational Therapy; Physical Therapy
TEETH: See also Dentistry
caries in pregnancy vs. diet, [Ebbs] *344
carious lesions in molars of hamsters, [Arnold] 292—ab
finger sucking: serial study from birth on, [Sillman] 153—ab

TELANGIECTASIA, estrogen relationship [Bean] 1412—ab
treatment, ultraviolet rays (Council report) *129
TELEPHONE Directories: See Medicolegal Abstracts at end of letter M
TEMPERATURE: See also Cold; Heat; Heating
daily, relation at time of conception, [Petersen & Mayne] *929
external, effect on shock, [Wakim & Gatch] *903
outside, effect on renal blood flow and glomerular filtration, [Byfield & others] *118
rooms of 75 F., in treating severe burns, 1157—E; 1352—E
TEMPERATURE, BODY, cooling vs. warming in shock, 432—E; [Perry] 966—C; (maintaining at 90 F. rectal) [Fay, Brown] 1109—C
heart response to water below; submersion syndrome, [Tuttle] 705—ab
High: See Fever
TENDON reflexes, Adle's syndrome, [Lowenstein] 288—ab
TENNESSEE, University of: See University
TENSION therapy, Science of, Cropp Therapeutic Couch, 537—BI
TERATOMA of mediastinum, [Dolley & Brewer] *1131
parasitic, successful removal from boy, [Gray] 466—ab
TERMINOLOGY: See also "Words and Phrases" under Medicolegal Abstracts at end of letter M
choice of words, 1190—ab
committee on Industrial nomenclature, 1229—OS
decay in medical language, 995—ab
electrocardiographic nomenclature; American Heart Association report, [Barnes & others] *1347
hyperkinemia, [Starr] 1111—ab
iatrogenic disorders, 879
medical adjective, 666—ab
medical slang, 827—ab
STANDARD NOMENCLATURE OF DISEASE AND STANDARD NOMENCLATURE OF OPERATIONS, [Jordan] *1001: (used by hospitals) *1026
TERSUS, cleansing solution for Halowax acne, 471
TESTIMONY: See Evidence
TESTIS: See also Gonads; Spermatozoa
brucellosis in refrigerator meat plant workers, [Purriel] 1417—ab
Excision: See also Castration
excision, orchiectomy or diethylstilbestrol for cancer other than that of prostate, 382
Hormone: See Androgens
irradiating, in prostate cancer, priority in proving, [Huggins] 147—C; [Munger] 1409—C
undescended, cryptorchism, [Schonfeld] *179; *181
undescended, treatment in infancy not advised, 472
TESTOSTERONE: See Androgens
TETANUS antitoxin, possible late complications of reaction, 1185
immunity (passive) duration; effect on active toxoid immunization, [Cooke & Jones] *1201
immunization (active) in the Middle East, 1157—E; [Boyd] 1181—ab
immunization for industrial workers, [Bristol] *816
immunization methods in British vs. American armies, 1299
immunization with fluid toxoid or with alum precipitate, [Leake] 852—ab
nervous system in, [Baker] 461—ab
toxoid (Alum Precipitated) N. N. R. (Pitman-Moore) 593
treatment, sulfonamide ointments, [Long] 307—ab
TETRAETHYLTHIURAM monosulfide treatment of scabies, [Percival] 156—ab
TETRYL, industrial hazard, [McGee] 852—ab
TEXAS Hospital Association war conference, 364
Radiological Society cancels meeting, 204
University of: See University
THALASSANEMIA: See Anemia, erythroblastic (Cooley)
THEELIN: See Estrone
THEOPHYLLINE ETHYLENEDIAMINE (Amnophyllin), N. N. R., (Dubin) 193; (Merrell) 839
THERAPEUTICS: See also Blood Transfusion; Diathermy; Drugs; Fever, therapeutic; Physical Therapy; Psychotherapy; Roentgen Therapy; etc.; under names of specific substances and diseases
hypnotism as procedure, 299
"information please" program, 364
inhalational therapy, New York Academy report, *755
THIAMINE HYDROCHLORIDE: See also Vitamins B1
action on pain, Russian All Union Institute discusses, 436; 521
deficiency, induced, [Williams] 1111—ab
diet deficient in, and manual labor, [Johnson] 789—ab; [Foltz] 1411—ab
THIAMINE HYDROCHLORIDE—Continued
effect on induced hyperthyroidism, [Williams] 1412—ab
flour enriched with, [Williams & others] *943
hypoimmunity in poliomyelitis, 1284—E
N. N. R. (Lakeside) 595
plus riboflavin to stimulate growth, 615
requirement of man, 53—E
sensitivity to, [Eisenstadt] 152—ab
treatment of diabetic neuritis, [Needles] *914
THIGH Amputation: See Amputation
THINKING: See Mental Work
THIOCYANATE Treatment: See Blood Pressure, high; Migraine
THORAX: See also Chylothorax; Pneumothorax, Artificial (cross reference); Ribs
American College of Chest Physicians, (postpones meeting) 776
chest clinics (night) opened, Md., 271
chest decompressed by removing ribs in dyspnagia, [Newton] 789—ab
chest pain (neuralgic) in soldiers, [Heaton] 460—ab
chest pain severe in epidemic pleurodynia, [Howard & others] *925
chest symptoms, immersion blast injuries, 679—E; 1220—E
chest wall tumors, [Dolley & Brewer] *1134; *1136
roentgen study, caudal-cranial ray direction, [Enquin] 295—ab
surgery, pentothal sodium anesthesia in, [Randolph & Kober] *1215
tumors, intrathoracic neuroblastoma, [Lee] 1247—ab
tumors (primary) intrathoracic, diagnosis, treatment, [Dolley & Brewer] *1130
war injuries, management, [Forsee] 1414—ab
THOROTRAST Hepatosplenography: See Liver abscess
THREADWORMS: See Oxyuriasis
THROAT: See also Larynx; Neck; Otolaryngology; Tonsils
infections and rheumatic fever, [Ditkowsky & others] *992
sore, milk borne milk, N. Y., 1297
sore, (Streptococcus), outbreak in army camp; sulfonamides for, [Bloomfield & Rantz] *315
THROMBOCYTES: See Blood platelets
THROMBOPHLEBITIS migrans, [Birnberg] 1310—ab
recurrent ulcers and neurologic disturbance of leg, 1316
treatment, [Evans] 623—ab
treatment, ligate vena cava and ovarian veins, [Collins] 1179—ab
THROMBOSIS: See also Embolism; Thrombophlebitis
Coronary: See also Arteries, coronary occlusion; Myocardium infarction; Medicolegal Abstracts at end of letter M
coronary, amphetamine inhalations precipitate (only), [Rhoads] 630
heparin response; clotting mechanism test, [de Takats] 1246—ab
intracardiac, attack of severe precordial pain, 471
pulmonary venous, after thigh amputation, ligating femoral prevents, [Veal] *240; (reply: value of early rising; avoid using tourniquet) [Samuels] 700—C
refrigeration (Allen's) preceding amputation prevents, [Crossman] 244—ab
venous treatment, [Evans] 623—ab
THRUSH: See Monilliasis
THUMBS: See Fingers
THYLOQUINONE, N. N. R. (Squibb) 677
THYMOMA removal in myasthenia gravis, [Turnbull] 459—ab
THYMUS tumors, diagnosis; treatment, [Dolley & Brewer] *1133
THYROID: See also Goiter; Goiter, Toxic
activity (increased) and altitude tolerance, [Rotter] 87—ab
chemical transformation of iodine fixed by, [Mann] 791—ab
desiccated, use in heart disease; Lorand's statement, 898
Extract: See also Thyroxin
extract, Marmola dangerous; physicians testimony at trial; court decision, 1286—E
Hyperthyroidism: See Hyperthyroidism
Inflammation: See Thyroiditis
iodine in nutrition, [Curtis & Fertman] *423
THYROIDITIS, chronic; Riedel's struma, etiology, [De Courcy] 465—ab
THYROTOXICOSIS: See Goiter, Toxic
THYROXIN cures acne conglobata and perianal pyoderma, [Sutton & Marks] *1344
TIBIA, fracture from fatigue, [Hartley] 376—ab
fractures from skiing, [Moritz] *98
TIC Douloureux: See Neuralgia, glossopharyngeal
TICKS, carriers of Brazilian typhus, 65
transportation of disease agents, 840—E
TIN, black dermographism from, [Urbach & Pillsbury] *185
TINEA in dogs and cats, 713
TINNITUS aurium, prostigmine for, [Ysander] 547—ab
TIREDNESS: See Asthenia; Fatigue; Neurasthenia
TISSUES: See also Mucous Membranes (cross reference); Skin
B vitamins in cancerous vs. noncancerous, 519—E
changes from heat vs. cold, difference in, 91
injured, vitamin C and repair, [Bourne] 892—ab
placental, retained, identification, in uterus curettings, 382
TITANIUM dioxide, black dermographism from, [Urbach & Pillsbury] *485
T-LAX, 69—BI
TOBACCO: cigaret smoking by armed forces vs. peptic ulcer increase, [Boles] *641; *644
use by aged, [Tuohy] *48
TOES: See also Fingers
green discoloration between, 300
walking on, diagnostic importance, 897
TOILET Water Dermatitis: See Berlock Dermatitis
TOLUENE, industrial hazard, [McGee] 852—ab
TOMATOES, consumption per capita, 1935-1936, [Stiebeling] *836
juice (canned), vitamin C and pH in, (Council report) *258
TONGUE, inflammation in vitamin B complex deficiency, [Moore & others] *245
lesions in sprue, [Kaufman & Smith] *168
River Apiaries Honey, 884—BI
TONOMETER station, National Society for Prevention of Blindness, 140
TONSILLECTOMY, adult, local or general anesthesia for, 898
vs. radon seeds, 896
TONSILLITIS: See Tonsils, infected
TONSILS, hypertrophic, radium emanation or x-rays in purpuric patient, 472
infected, acute outbreak; rheumatic fever in children's institution after [Ditkowsky & others] *991
infected chronic, subclinical cardiac disorders in, [Herve] 548—ab
sore throat (septic) relation to, [Bloomfield & Rantz] *318
tuberculosis, latent, [Cote] 1112—ab
TOOTH: See Teeth
TOPEKA Institute for Psychoanalysis lectures on psychoanalysis, 1100
TORONTO, University of: See University
TORULA, meningitis caused by, [Skogland] 1179—ab
TOTAQUINE dosage, 138
TOURNIQUET, avoid using to prevent embolism, [Samuels] 700—C
TOXEMIA, intestinal, source of blepharoconjunctivitis, [Szerdahelyi] 982—ab
TOXICOLOGY: See Poisoning
TOXOID: See Biologic Products; Staphylococcus; Tetanus; etc.
TOXOPLASMOSIS, encephalomyelitis, [Cowen] 287—ab
encephalitis (infantile), diagnostic eye lesions, [Koch] 1178—ab
TRACHEA, intubation to resuscitate newborn, [Torpin] 147—C
obstruction (nondiphtheritic infections), tracheotomy for, [Neffson] 624—ab
TRACHEOTOMY: See under Trachea
TRACHOMA program, (report, Okla.) 877
treatment, local sulfanilamide, [Morate] 893—ab
TRACTOTOMY: See Brain surgery
TRADE Hazard; Poisoning; Unions: See various headings under "Industrial"
TRAFFIC Accidents: See Accidents
TRAILL, R. R., Varrier-Jones lecture on tuberculosis, 143; 206
TRAINING Camps: See Medicine and the War
TRAINS: See Railroads
TRANSFUSION: See Blood Transfusion
TRANSIENTS: See Strangers
TRANSPLANTATION: See Grafts (cross reference); Ureters
TRANSPORTATION: See Accidents, traffic; Automobiles; Aviation; Railroads
of Sick and Wounded: See Ambulances; Stretcher
TRASENTIN, antispasmodic action on colon, [Atkinson & others] *848
TRAUMA: See also Accidents: Disasters; Wounds; Medicolegal Abstracts at end of letter M; under specific organs and diseases as Brain; Gallbladder inflammation; Knee; Nerves; Scapula, etc.
Athletic Injuries: See Athletics
Blast Injuries: See Bombs
Bombs Causing: See Air Raids; Bombs; World War II
contusion, persistent ulnar nerve pain after, 382
cooling in shock, [Fay] 1109—C; [Brown] 1109—C
crushing injury, [Bywaters] 82—ab; [Eggleton] 83—ab
Industrial: See Industrial Accidents; Workmen's Compensation
Nonpenetrating Injuries: See Abdomen
remote, as cause of detached retina, 300
role in cutaneous melanomas, [Driver & MacVicar] *415
War Injuries: See World War II; wounds
TREATMENT: See Therapeutics

TREMATODES: See Flukes
TRENCH FEVER experiments, federal legislation on, (Bureau report) 1381—OS
TREPONEMA staining, simple, rapid, reliable technic, [Perrin] 295—ab
TRIALS: See Medical Jurisprudence
TRICHINELLA and eosinophilia, 796
TRICHINOSIS: See also Trichinella
under Hitler's rule, 602
TRICHOMONIASIS, vaginal, human, experimental, [Hesseltine] 461—ab
TRICHOPHYTON infection: See Dermatophytosis
TRINITROTOLUENE: See Nitrotoluene
TRIPHENYLMETHYLENE injections, effect on breast cancer in rats, 962
TRIPLETS, breast feeding procedure for, 1116
TRI-STATE Medical Association of Carolinas and Virginia (postpone meeting) 272
TROMBIDIOSIS in soldiers from picking beans, [Schuppli] 219—ab
TROOPS: See Medicine and the War; World War II
TROPICAL DISEASE: See also Malaria; Schistosomiasis; Yellow Fever; etc.
registry of, Wis., 1170
TROPICAL MEDICINE, American Foundation of, seeks to raise $100,000, 693
American Society of, presents Walter Reed medals, 364
courses at U. of Havana, 533
jungle first aid station, 1223
lectures (by Col. R. P. Strong), 608; 775; (by Drs. Brown and Ruiz Castaneda) 609
research, Macy Foundation to finance, 271
School of: See University of Puerto Rico
specialists training, 55; (at Tulane) 449; (at Army Medical School) 533
TRYPANOSOMIASIS, American (Chagas' disease), blood sucking assassin bugs transmit, 65
TUBE: See Catheter; Trachea intubation
TUBERCLE BACILLI, survival in books, [Smith] 283—ab
"TUBERCLE ENDOTOXOID," [Bridges] 625—ab
TUBERCULID, treatment, ultraviolet rays (Council report) ★129
TUBERCULIN, N. N. R., (Sharp & Dohme) 839
test in bone tuberculosis, [Howard] 285—ab
TUBERCULOID types of leprosy, [Pardo-Castello & Tiant] ★1264
TUBERCULOSIS: See also Tuberculosis, Pulmonary; and under names of specific diseases and organs
Argentine societies meet, 1405
case finding, photofluorographic units in war industries, armed forces, hospitals, etc., [Parran] ★520; (results) 298
case finding, x-ray survey, (at U. S. Navy Yard, Philadelphia) 140; (among union workers, Pa.) 272
clinics, night service, opened, Md., 271
control, (Argentine) 208; (Palestine) 779; (Dr. Flick director, Wis.) 878; (Germany) 1164
control, county accreditation, Minnesota plan, [Myers] ★921
control, office of, U. S. P. H. S. establishes, [Parran] ★520; (results) 1298
diagnosis (early), BCG vaccine for, in infants, 615
diagnosis, serum precipitation reaction by sulfuric acid, [Tabanera] 295—ab
diagnosis, treatment, England, 695
history: incident of Stark, Baillie and Hunter, [Holman, Moorman] 966—C
hospitals, statistics, ★1015
immunization, BCG, of infants, Rio de Janeiro, 66
immunization, BCG, value of, 1419
immunization, in Germany, 1360
in dogs and cats, 713
in Germany, 200; 266; 1164
in old age, 32—ab
in young people: Varrier-Jones lecture by Dr. R. R. Traill, 143; 206
increase in wartime, (England) 206; 962; (Belgium) 534
indurativa, Bazin's disease ultraviolet rays for, (Council report) ★129
industrial placement and, [Harvey & Luongo] ★104; ★106; 986; [Bartle] ★1002
industrial trainees, [Sawyer] 853—ab
localization before outbreak of renal tuberculosis, [Suter] 1114—ab
luposa, ultraviolet rays for, (Council report) ★128
mortality by counties, Minn., [Myers] ★921
mortality rate vs. old age, 32—ab
mortality, Rio de Janeiro, 1238
National Tuberculosis Association meeting canceled, 1405
North Carolina Association cancels meeting, 1297
primary, complex, what does it mean? 986
primary, late infection, [Löffler] 377—ab; [Uehlinger] 378—ab; [Leitner] 378—ab
sanatorium addition, Kentucky, 59
sanatorium, danger of nurses contracting in, 206
sarcoidosis relation to, [Bernstein] 290—ab; [Thomas] 1111—ab
treatment, diaminodiphenylsulfone, promin, sulfadiazine, 763—E; 798
TUBERCULOSIS—Continued
Vaccination: See Tuberculosis, immunization
vaccines, 1419
vitamin A deficiency and, [Dormer] 293—ab
TUBERCULOSIS, PULMONARY, artificial pneumothorax in, extrapleural; late results, [Geary] 622—ab
artificial pneumothorax in, ambulatory, 10 years' experience, [Tice] 622—ab
artificial pneumothorax in, pleural shock and air embolism, [Ormond] 790—ab
artificial pneumothorax in, subsequent history of, [Morriss] 622—ab
complications, intestinal tuberculous ulcers perforate, [Lambert] 295—ab
diagnosis, early by mass radiography, 206
sputum (occasionally positive) management of, [Stokes] 285—ab; 986
surgical treatment, pentothal sodium anesthesia in thoracoplasty, [Randolph & Kober] ★1215
treatment, sulfone compounds, (especially promin) 763—E; 798
treatment, "tubercle endotoxoid," [Bridges] 625—ab
TUFTS College, (alumni dinner) 876; (medical school, 50th year) 1297
Alumni Lecture: See Lectures
TULANE University, (tropical medicine study begins at) 449; (Dr. H. W. E. Walther's gift to) 959
TUMORS: See also under names of specific organs and types of tumors
calcinosis, [Incian] ★490
Children's Tumor Registry at Memorial Hospital, New York, 273
etiology, inject estrogens in sesame oil, [Conrad & others] ★237
etiology, ultraviolet rays radiation, 1285—E
giant cell, of chest wall, [Dolley & Brewer] ★1135
Glomus: See Glomus Tumor
Malignant: See Cancer; Sarcoma
metastases of melanomas, [Driver & MacVicar] ★413
TUNICA vasculosa lentis in premature infants, [Terry] 1178—ab
TWINS, breast feeding procedure for, 1116
Parasitic Twin: See Fetus, parasitic
TYPHOID: See also Paratyphoid
carrier state treated with sulfaguanidine, (correction) 365
carriers in mental hospitals, new central unit, Ill., 608
carriers, Pennsylvania, 140; 877
complications, Eberthella typhosa septicemia, sulfonamides for, [Kanof & others] ★14
epidemic at state hospital, suits against Illinois officials dismissed, 362
epidemic, fight against, Palestine, 779
epidemic on Italian side of frontier, 953
etiology; infected cheese, [Bowman] 460—ab
in children, shock therapy with antityphoid vaccine, [Peluffo] 85—ab
vaccination for industrial workers, [Bristol] ★816
vaccine fever therapy, severe renal irritation from, [Taylor & Page] ★754
vaccine intravenously for gonorrheal arthritis, 714
vaccine, intravenously, response in diabetics, [Greene & Keohen] ★174; ★175
TYPHUS, Brazilian, dogs as healthy carriers, 65
diagnosis (differential) from Q fever, [Zemp] ★828
in Germany, 200; 352; 602; 686; (vaccinate all) 1227
Pan American Sanitary Bureau committee, 612
research, Russian All Union Institute discusses, 436; 521
transmission by lice bite or their feces, [Löffler] 467—ab
TYROCIDIN, [Smith] 851—ab
in vitro and in vivo studies, [Robinson] 979—ab
TYROTHRICIN, [Smith] 851—ab; [Bordley] 978—ab; [Robinson] 979

U

ULCER: See also Abscess; Colitis, ulcerative; Peptic Ulcer; Pyoderma; under organ affected
indolent, ultraviolet rays for, (Council report) ★126
recurrent, and neurologic disturbance of leg, 1316
streptococcic chronic, of skin, [Goodman] 38—ab
streptococcus (microaerophilic hemolytic) of nose, [Costello] ★36
treatment, amino acids for nonhealing type, [Altshuler & others] ★164
treatment, cod liver oil locally, (Council report) ★759
ULCUS Molle: See Chancroid
ULTRAVIOLET RAYS, air disinfection to control infection, 261—E; (use of lamps in schools advised?) 382; [Smith] 851—ab; (in infants ward) [Sommer] 889—ab; [Henle] 890—ab; (in children's hospital) [Robertson & others] ★908; (Council statement) 1371—OS
ULTRAVIOLET RAYS—Continued
burn produced by; factor of age, sex, pregnancy, of being a blond or brunet, (Council report) ★515
radiation effect on metabolism, respiration and growth, (Council report) ★514
radiation tumors induced by, 1285—E
therapeutic value, (Council report) ★126; (undesirable effects) ★513
UNDERGRADUATE WORK: Students; etc.: See Education, Medical; Schools, Medical; Students, Medical; University
UNDERNOURISHMENT: See Nutrition
UNDULANT FEVER: See Brucellosis
UNIFORM, new, for nurses at London Hospital, 64
UNIONS: See Industrial Trade Unions
UNITED STATES: See also American; Federal
Army: See Army, United States; Medicine and the War
Bureau of Census: See Census
censorship of published description of articles by A. M. A. Council, 839
Census: See Census
Chamber of Commerce, (creates National Health Advisory Council) 693
Citizens Defense Corps, Gas Protection Service of, 600
citizenship, urge speedy naturalization of alien physicians, 365
Civil Service Commission (examination for hospital training in dietetics) 205
Congress, Medical Legislation in: See Laws and Legislation
Department of State suspends traveling fellowship for the duration, 204
Employees' Compensation Act and chiropractors, (Bureau report) 1381—OS
government employees, low cost care for women, 362
government industrial establishments, handicapped in, [Harvey & Luongo] ★100
Government Manual for professional men, 205
Hospital building by: See Hospitals, building
Laws and Legislation: See Laws and Legislation
Maritime Commission health and safety program, [Drinker] ★822; (discussion) 862—ab; (A. M. A. Council to help) 1230; (name ships after Johns Hopkins doctors) 1358
Medical Academy, legislation proposed, (Bureau report), 1380—OS
Navy: See Medicine and the War; Navy, United States
Office of Indian Affairs now in Chicago, 777
Pharmacopeia: See Pharmacopeia
Public Health Service: See Health
Social Security Act: See Social Security
Supreme Court Decision: See Medical Jurisprudence
War with: See Medicine and the War; World War II
UNIVERSITY: See also Education, Medical; Schools, Medical; under names of specific university as Boston; Denison; Duke; Ohio State; Princeton; etc.
Health Service: See Students, health service
of Alabama, (to establish medical school) 774
of California, (Langley Porter Clinic dedicated) 690
of Chicago, (train Army laboratory officers) 599
of Chile, (first National Congress of Medicine) 365
of Florida, (graduate dept. of medicine organized) 1296
of Georgia, (medical school restored to approval) 769—OS
of Havana, (courses in tropical diseases) 533
of Illinois, (course on psychoanalysis and psychosomatic medicine) 70; (refresher course in ear, nose and throat) 690; (Dean Davis to retire) 875
of the Littoral, 1300
of London, (undergraduate medical school proposed) 63
of Maryland, (premedical study reduced) 362
of Michigan, (trains specialists for Army) 437
of Mississippi, (Shands Memorial Loan Fund) 1297
of North Carolina, (Kellogg Foundation fellowship in health education) 525; 597—E
of Pennsylvania, (courses in public health and preventive medecine), 272; (share in Hatfield bequest) 1405
of Puerto Rico School of Tropical Medicine opened in 1926, 599; (correction) 961
of Tennessee, Supreme Court upholds medical school expulsions) 204; (Dr. Knisely et al. work on intravascular agglutinations in malaria), [Nash, Knisely] 885—C
of Texas, (Dr. Bodansky portrait given to) 204; (rare book exhibit from Leake collection) 1297
of Toronto, health service, 265
of Utah Medical School activities, 1102
of Vermont, (new blood bank) 1235
of Virginia, (school of military government) 683
Students: See Students

UREA plus quinidine in arrhythmias, [Sturnick & others] ★917
resensitization of sulfonamide fast bacteria, 680—E
UREMIA, fatal sulfonamide toxicity, [Sutliff & others] ★307
URETERS, Black Tablets for, 618—BI
Calculi from Sulfonamides: See Urinary System calculi
Catheter: See Catheters
dilatation, etiologic role in hypertension, Everett] 787—ab
obstruction, kidney viability after, 301
transplantation into sigmoid for bladder cancer, [Jewett] 375—ab
URETHRA, Calculi from Sulfonamides: See Urinary System calculi
obstruction: female obstructing prostate, [Folsom & O'Brien] ★573
rupture, cystostomy for, [Roccatagliata] 1182—ab
URINARY SYSTEM: See also Bladder; Kidneys; Ureters; Urethra; etc.
calculi, fatal sulfonamide toxicity, [Sutliff & others] ★307
calculi from sulfadiazine, value of urine ph; use sodium bicarbonate, [Fox & others] ★1147
calculi from sulfonamides, [Dowling & Lepper] ★1190
calculi from sulfonamides used in pneumonia, [Flippin & others] ★233; ★234
calculi, vitamin A deficiency and, [Jewett & others] ★566
infections, sulfadiazine efficacy; toxicity, [Finland] 622—ab
Roentgenography: See Urography
URINATION disorders, female obstructing prostate, [Folsom & O'Brien] ★573
frequent (nocturia), implant of testosterone, [Greenblatt] ★20
URINE, alkaptonuria in ochronosis of sclera and cornea (refutation), [Steele] 700—C; (first British report in 1906 *Lancet* by Dr. Pope) [Twyman] 784—C; [Smith] 1304—C
biotin after giving egg white and avidin, [Rhoads & Abels] ★1261
biotin excretion, [Oppel] 977—ab
calcium, magnesium, phosphorus vs. intestinal absorption, [McCance] 1113—ab
creatinine excretion in women; relation to obesity, [Tager] 542—ab
creatinuria, estradiol benzoate and testosterone propionate in man; [Knowlton] 542—ab
estrogens and pregnandiol in amenorrhea, [Rydberg & Pedersen-Bjergaard] ★1117
galactosuria (induced) in heart disease, [Chávez & others] ★1280; ★1281
Hemoglobin in: See Hemoglobinuria
pH, value in preventing sulfadiazine renal complications, [Fox & others] ★1147
of Pregnant Women: See Gonadotropins, chorionic
phosphorus clearance vs. creatinine clearance, vitamin D and dihydrotachysterol, 518—E
Polyuria: See Diabetes Insipidus
Pus in: See Pyuria
Red: See Hemoglobinuria
retention, estrogen therapy, [Bazterrica] 793—ab
Sugar in: See Diabetes Mellitus; Glycosuria
suppression, mecholyl chloride given for, reaction to, [Spitz] 302
urobilinogen in heart disease, [Chávez & others] ★1280
vitamins in, assaying, [Kruse] ★672
UROBILINOGEN in Feces: See Feces in Urine: See Urine
UROGRAPHY, fatal and other sequels after contrast mediums, [Pendergrass] 977—ab
UROLITHIASIS: See Urinary System calculi
UROLOGY, American Urological Association (meeting canceled), 611; (prize not awarded this year) 776
URRUTIA y RUIZ, Manuel, studying at health museum, Ohio, 372
UTAH, University of: See University
UTERUS: See also Placenta
cancer (cervical), prognosis, [Gemmell] 218—ab
cancer (cervical), radium dosage plus supplementary x-rays, [Jones] 217—ab
Cervix: See also Uterus cancer; Uterus tumors
cervix, erosions and ulcerations; iodine test, 1420
cervix, noncarcinomatous postirradiation ulcers, [Jacox] 464—ab
curettings, identification of retained placental tissue in, 382
Hemorrhage (functional): See Menstruation
hemorrhage in girls; progesterone for, [Allen] 787—ab
Mucosa: See Endometrium
inertia, diethylstilbestrol for, [Abarbanel & others] ★1124; ★1127
nerve supply to, in pregnancy, [Hingson & Edwards] ★225; ★227
prolapse, fibroids, etiologic role in hypertension, [Everett] 787—ab
rupture (traumatic) from auto accident, [Woodhull] 82—ab
Sterile Uteroids, 453—BI
UTERUS—Continued
tumors, cervical polyp or ovarian neoplasm? 381; (reply) [Berry] 1186
tumors, fibromyomas, [Torpin] 73—ab
tumors, myoma, antifibromatogenic action of hormones, [Lipschütz] (correction) 694
tumors, myoma, testosterone pellet implantation for, [Greenblatt] ★18

V

V MAIL Letter (bi-weekly) for medical officers in service, 262—E; 1363—OS
Biomed., 1225; 1363—OS
VACCINATION: See also Immunization; under names of specific diseases as Leishmaniasis; Smallpox; Typhoid; Whooping Cough; Yellow Fever; etc.
BCG: See Tuberculosis, immunization
educational program, Minneapolis, 876
VACCINE: See also Biologic Products; Vaccination; under names of specific diseases as Colds
BCG: See Tuberculosis, diagnosis; Tuberculosis immunization
Therapy: See also Typhoid vaccine
therapy and hemolytic Escherichia coli in feces, 1420
VACCINIA virus, chemoprophylaxis, 435—E
VAGAL Stimulation: See Nerves, vagus
VAGINA, heating, in pelvic diseases, with Elliott and diathermy machines, [Upton & Benson] ★38
smears and mucosa after implanting testosterone, [Greenblatt] ★21
Suppositories Diethylstilbestrol, N. N. R. (Abbott) 839
Trichomonas Infection: See Trichomoniasis
VAGINITIS: See Vulvovaginitis
Trichomonas: Trichomoniasis
VALINE, role in nutrition, 765—E
VAN METER Prize: See Prizes
VAQUEZ-Osler Disease: See Polycythemia vera
VARICOSE VEINS, eczema after sulfathiazole ointment, [Cohen & others] ★408
eczema subjacent phlebitis cause of? 1419
thrombocyte deficit test, [Maynard & Hollinger] ★1195
VARIOLA: See Smallpox
VARRIER-JONES Lectures: See Lectures
VASCULAR Disease: See Blood Vessels
VASELINE Hair Tonic, 69—BI
VASOCONSTRICTION; **VASODILATATION**: See Vasomotor System
VASOMOTOR SYSTEM adjustments in spinal anesthesia, [Papper & others] ★27
vasoconstriction or vasodilatation from stimulating nerves controlling brain vessels, 224
vasodepressor carotid sinus reflex, [Sigler] 623—ab
vasoneuropathy (peripheral) after chilling, [Ungley] 218—ab
vasoneurosis (capillary) role in peptic ulcer, [Boles] ★642
VAUX, NORRIS W., statement on continuous caudal analgesia, 260—E
VEGETABLES: See also under names of specific vegetables as Beans
Canning: See Canning
consumption per capita 1909—1939, [Stiebeling] ★833; ★836
juice cocktail, vitamin C in and *pH* of, vs. tomato juice, (Council report) ★258
VEGETRATES, Inc., Vi-An Tablet, 699—BI
VEINS: See also Blood Vessels
azygos, anatomy of left pleural cavity, 223
Caval: See Vena Cava
femoral, high ligation, to prevent pulmonary complications after thigh amputations, [Veal] ★240; [Samuels] 700—C
Fistula: See Fistula
Inflammation: See Phlebitis; Thrombophlebitis
Injection into: See Injection, intravenous
orbital, ligate in pulsating exophthalmos, [Martin & Mabon] ★330
ovarian, ligate in thrombophlebitis, [Collins] 1179—ab
Portal: See Portal Vein
stagnation as cause of hypotension in spinal anesthesia, [Papper & others] ★29
Thrombosis: See Thrombosis, venous
Varicose: See Varicose Veins
VENA CAVA inferior, ligate in pelvic thrombophlebitis, [Collins] 1179—ab
superior, fistula between aorta and, [Barker] 291—ab
superior, obstruction, x-ray contrast diagnosis, [Taylor & McGovern] ★1270
VENEREAL DISEASE: See also Chancroid; Gonorrhea; Lymphogranuloma; Venereal; Prostitution; Social Hygiene; Syphilis; Medicolegal Abstracts at end of letter M
Baltimore Council, Md., 876
clinic at reception center for newly inducted soldiers, 1096
control director, (Dr. Woofter, Ia.) 531; (Dr. Sorensen, Kan.) 1100
control in wartime, [Strauss & Grunstein] ★1187
control, Michigan law, (Bureau report) 1379—OS
Education Institute, N. C., 1297
increase in boys and girls (15 to 19) N. Y., 203
increase, New York City, 363
VENEREAL DISEASE—Continued
lectures, (Ala.) 139; (Miss.) 1101
preventive, of U. S. Army, [Greenwald] ★10
rate in armed forces, 762—E; 1358
rate in enlisted troops in 1918, [Greenwald] ★9
rate in group at Fort Benning, [Loveless & Denton] ★827
recrudescence of, Germany, 1360
rehabilitation center (Lindbergh home) for women, N. J., 60
treatment centers, (set up with Lanham Act funds) 777; (U. S. P. H. S. program) 847
treatment, compulsory, England, 143; 207; (new regulation) 274; (defeat opposition) 778; 1406
VENOM: See Cobra
VENTILATION: See Temperature, room
VERMONT: See University of Vermont
VERTEBRA: See Spine
VERTIGO, aural, Ménière's syndrome, [Atkinson] 1309—ab
labyrinthine, probable, 162
VESALIUS, ANDREAS, and the **FABRICA**, 1543-1943, [Castiglioni] ★582; (celebration at New York Academy) 609; (exhibit at Cleveland) 1297
VETERINARIANS, procedure of processing, Surgeon General's recruiting program, 843
Selective Service bulletin on, 131—E; 133
VETERANS, World War II, rehabilitation, 1382—OS
VI-AN Tablets, 699—BI
VIBRAPHONE, (Council report) 345
VICTORY Tax: See Tax
VIEM: See All Union Institute of Experimental Medicine
VIRGINIA, University of: See University
VIRILISM, effect of androgen on woman's voice, [Goldman] 978—ab
effect of estradiol benzoate and testosterone propionate, [Knowlton] 542—ab
not associated with testosterone implantation, [Greenblatt] ★21; 23—ab
VIRUS: See also Encephalitis, Epidemic; Herpes simplex; Influenza; Keratoconjunctivitis, epidemic; Pneumonia, atypical; Poliomyelitis; Yellow Fever
chemoprophylaxis, 435—E
diagnostic unit, new, Calif., 690
infections, B_1 vitamin hypoimmunity, 1284—E
of cats, and atypical human pneumonia. 197—E; [Blake] 980—ab
research, examples of recent progress in, 1353—E
VISION: See also Eyes; Glasses; Ophthalmology
acuity, translate ophthalmologist's equivalents into those for armed services, [Linksz] 1316
Color: See Color Blindness
conservation, A. M. A. committee on, 1228—OS; 1390—OS
Dark Adaptation: See Eyes, accommodation
defective, industrial employment with, [Harvey & Luongo] ★105; ★106; [Bartle] ★1002
in older workers, [Carlson] ★808
Loss of: See Blindness
yellow, from sulfapyridine, sulfathiazole, sulfadiazine, [Dowling & Lepper] ★1190
VITAL STATISTICS: See also Population
birth rate, improves, England, 1104
birth rate in U. S., Germany, Italy, Japan, 349—E
birth rate, Rio de Janeiro, 66
birth rate, women over 30 should have more babies, 364
Death Rate: See also Accidents, fatal; Automobiles, accidents; Death, cause of; Infants, mortality; Life, expectancy; Maternity mortality; Physicians, death of; under names of specific disease
death rate and shortage of doctors, unscientific Science Service, 132—E
death rate by occupations, [Manson] 863—ab
death rate, *Current Mortality Analysis*, 948—E
death rate, England, 1104
death rate; leading causes, Brazil, 1238
death rate, 1930 to 1940, 607—OS
death rate of hospital admissions, ★1019
morbidity under Hitler's rule, 266; 352; 602; 1164
of natives under British colonial rule, 695
VITALEX Perdiz, 884—BI
VITALLIUM repair of cranial defects, [Pudenz] ★478
VITAMINS, Deficiencies: See also under names of specific vitamins
deficiencies, [Kruse] ★587; ★869
deficiencies, vs. skin disorders in diabetes, [Rudy] 790—ab
diet content for the aged, [Tuohy] ★47
diet content, relation to family size and income, [Stiebeling] ★835; ★836
diet high in, for portal cirrhosis, [Greene] ★715
for expectant mothers and young children, 267
fortification of foods, A. M. A. Council statement, 1369—OS
industrial hazards (benzene, lead) relation to, [Cowgill] 868—ab
industrial workers, [Wilder] 869—ab

VITAMINS—Continued
industrial worker's lunches, [Goodhart] ★93
metric system instead of apothecary system, (Council discusses) 839
preparations, (Council discusses) 838
sale curbed, N. J., 532
treatment in dermatology and syphilology, [O'Leary] 151—ab
treatment, nasal instillation for colds, [Vidal Freyre] 1417—ab
treatment to protect against respiratory infections, [Keefer] ★804
VITAMINS A and D: R M Dietary Supplements, 699—BI
blood plasma level in liver disease, [Popper] 1413—ab
Dark Adaptation: See Eyes
deficiency in tuberculosis and diabetes, [Dorner] 293—ab
deficiency in urolithiasis? [Jewett & others] ★566
diet for pregnant and lactating women, [Ebbs] ★342
N. N. R., (White's Oleo-Blend) 193
no effect on respiratory infections, [Lewis & Barenberg] 212—C
oleomargarine fortified with, New York Academy recommends, 1102
oleomargarine fortified with, Wilson's, 677
treatment of color blindness, (reply) [Weigand] 382
treatment of ichthyosis, [Rapaport] 1310—ab
treatment, Paget's osteitis deformans relation to hyperthyroidism, [Lyon] 294—ab
VITAMINS B COMPLEX deficiency and hypochromic anemia, [Moore & others] ★245
deficiency in liver dysfunction, [Portis] ★733; (discussion) 737
deficiency signs ("spiders") relation to estrogens, [Bean] 1412—ab
diet deficient in, and manual labor, [Johnson] 789—ab; [Foltz] 1411—ab
diet deficient in, effects in sedentary men, [Egana] 371—ab
diet for pregnant and lactating women, [Ebbs] ★342
Hain Becompx Capsules, 699—BI
in cancerous tissues, 519—E
B_3: See also Acid, nicotinic; Thiamine Hydrochloride
B_3 and iron combination, Enrich, 884—BI
B_3 hypoimmunity especially in poliomyelitis, 1284—E
B_3 requirement of man, 53—E
B_3 therapy in diabetic neuritis, [Needles] ★914
B_6: See Riboflavin
B_6: See Pyridoxine
VITAMINS C: See also Acid, ascorbic; Scurvy
allocation control of, 57
diet for pregnant and lactating women, [Ebbs] ★343
in mixed vegetable juices and in canned tomato juice, (Council report) ★258
injured tissue repair and, [Bourne] 892—ab
lead absorption and, [Evans & others] ★501
nutrition in Royal Navy, [McNee] 546—ab
ochronosis of sclera and cornea complicating alkaptonuria, (refutation) [Steele] 700—C
plus salt to prevent heat exhaustion, [Goodhart] 871—ab
VITAMINS D: See also Cod Liver Oil; Ergosterol, Irradiated; Rickets
diet deficient in, [Hinglais] 1417—ab
diet for pregnant and lactating women, [Ebbs] ★341
dihydrotachysterol and, 518—E
for children in sunshine areas of Guatemala, 162
milk, Council statement, 1369—OS
sugar absorption, phosphate metabolism and, [Laszt] 626—ab
treatment of hyperthyroidism, [Puppel] 1175—ab
VITAMINS E (alpha-tocopherol) diet for pregnant and lactating women, [Ebbs] ★343
corpus luteum action intensified by, [Bach] 220—ab
deficiency in mother affects embryo, 1285—E
VITAMINS H: See Biotin
VITAMIN K: See also Menadione
diet for pregnant and lactating women, [Ebbs] ★343
Prothrombin determination; deficiency: See Blood prothrombin
treatment of icterus gravis neonatorum, [Danis] 544—ab
VITAPHORE, 618—BI
VITAPHOSPHATES, 618—BI
VITILIGO: See Leukoderma
VITREOUS, floating opacities of eyes, 92
VIVISECTION: See Animal Experimentation
VOCABULARY: See Terminology
VOCATIONAL Placement; Rehabilitation: See Industrial Health; Rehabilitation
VOICE of women, effect of androgen therapy, [Goldman] 978—ab
VOMITING: See also Nausea
from sulfapyridine, sulfathiazole, sulfadiazine, [Dowling & Lepper] ★1190
VULVOVAGINITIS, Gonococcic: See Gonorrhea
senile, diethylstilbestrol for, [Abarbanel & others] ★1124; ★1125

W

WAAC: See Medicine and the War
WADLEY, MARY E., requested cardiac clinic at Bellevue in 1911, [Cohn] 70—C
WAGES: See also Fees; Tax, victory
adjustments of hospital employees: National War Labor Board order no. 26,533
WALKER, SIR NORMAN, death, 205; 534
WALKING on toes instead of soles of feet, diagnostic significance, 897
WAR: See also Medicine and the War; Spanish Civil War; World War
epidemic diseases, spread of, [Geiger] 70—C
Gas: See Gas
great army surgeon: Pirogoff, 1325—ab
Industries: See Medicine and the War, industries
Manpower Commission, (Division of Technical Employment and Training) [Elliott] ★631; 678—E; (function of) 844
Medical Service: See Medicine and the War; World War II
Neurosis: See Neurosis
Nutrition in Wartime: See Medicine and the War, nutrition; World War II, nutrition
Prisoners of: See World War II
Service, Physicians registered for: See Medicine and the War, Procurement and Assignment
Surgery: See Surgery, war
War Medicine: See Journals
Wounds: See World War II
WARD, CHARLES HOWELL, death, 692
WARFARIN: See Heat, therapeutic use
WASHINGTON County, Md., program to prevent deafness, 1354—E
University: See George Washington University
WASTE MATERIAL CAMPAIGN, disposal of scrap films, 630
5,000 lbs. of surgical instruments rescued from scrap metal heap, 138
WATER: See also Baths: Drowning; Fluids; Hydration; Steam; etc.
blast, depth charges and pathologic changes from, [McIntire] 120: ★1137; [Cameron] 121: 376—ab; 1220—E
borne outbreak of paratyphoid B, [Jones] 84—ab
drinking, potassium-citric acid-lactose tablet to sterilize, [Violle] 1182—ab
effect on hair growth, 1116
Extraction from Food: See Dehydration
immersion blast injuries, 679—E; 1220—E
immersion foot or hand, [Webster] 77—ab; [Ungley] 218—ab; [Lewis] 1311—ab
Mineral: See Mineral Water
submersion syndrome, cardiac response to, [Tuttle] 705—ab
submersion syndrome: intra-abdominal underwater blast injury, [Auster & Willard] ★895
Supply: See also Medicolegal Abstracts at end of letter M
supply, OCD Circular Medical Series No. 26, 351
WAVES: See Medicine and the War, Waves
WEATHER: See Cold; Desert; Heat; Seasons; Temperature
WEIGHT, body: See Body weight; Infants, newborn; Obesity
Lifting: See Lifting
WEIGHTS AND MEASURES, metric instead of apothecary system, Council to use, 839
WEISS, SOMA, tribute to, as Council member, 1368—OS
WELCH Lecture: See Lectures
WELDING, arc, erythema from; use West Protective No. 88, 162; (correction) 365
WELFARE: See Children welfare; Maternity; Social welfare; etc.
WELTMANN Band: See Blood coagulation
WEST Protective No. 88, for welders, 162; (correction) 365
WESTERGREN Test: See Blood sedimentation
WESTERN Association of Industrial Physicians and Surgeons, 1103
Electric Ortho-tronic Audiphone, 1283
WESTERN RESERVE University, (Megrail Collection) 60; (chemical warfare course) 447
WESTINGHOUSE scholarships; second Science Talent Search, 777
"WETTING Agents": See Detergents
WHEAT: See also Flour
consumption per capita, 1909-1939; [Stiebeling] ★834; ★836
WHISTLE-smile reflex in parkinsonism, [Hanes] ★1152
WHITE HOUSE Apple Juice 120: 697
Conference on Children follow-up by National Citizens Committee, 533
WHITE LEG: See Phlegmasia alba Dolens
WHITE, R. E., male nurse, police want, 1236
WHITE'S Oleo-Blend Vitamin A Capsules, N.N.R., 193
WHOOPING COUGH and lung, [Parra] 468—ab
treatment, high altitude flights or low pressure chamber, [Lauener] 626—ab
vaccination in pregnancy protects newborn; placental transmission of protective antibodies, [Cohen & Scadron] ★656
WIEL Garlic Tablets, 884—BI
WILBUR, RAY LYMAN, (Snow medal to) 611; (statement at Annual Congress on Medical Education) 678—E
"WILD FIRE": See Pemphigus foliaceus
WILINSKY (Charles F.) library fund, 202
WILSON, FRANK N., in Buenos Aires, 208
WILSON, Sir CHARLES M., honored, 1103
WILSON'S Certified Oleomargarine, 677
WINTHROP Chemical Co., Army-Navy E, 57; (takes over Alba Co.) 204; (Dr. Guild president of Fairchild Bros. & Foster) 959; (dilodrast concentrated solution) 1351
WINTROBE-Landsberg Test: See Blood sedimentation
WIRELESS: See Radio
WOLFE, RUSSELL S., awarded Soldier's Medal, 1356
WOMEN: See also Adolescence; Marriage; Maternity; Menopause; Menstruation; Pregnancy
American: more or less continuously bored, 655—ab
in Industry: See Industrial Health, workers (women)
in Medicine: See Physicians, women; Students, Medical, women
over 30 urged to have more babies, 364
WOMEN'S AUXILIARY, news of, 445; 607; 689; (program for June meeting) 1231—OS; (promote *Hygeia* interest) 1366—OS; (news of) 1402
WOMEN'S Field Army: See American Society for Control of Cancer
WONDERSALVE, 280—BI
WOOD: See Plywood
Alcohol: See Methyl Alcohol
WORDS AND PHRASES: See Terminology; Medicolegal Abstracts at end of letter M
WORK: See also Exercise; Industrial Health
diminution of working capacity in disease; oxygen intake; oxygen debt, 1093—E
effects of vitamin B deficient diet and manual labor, [Johnson] 789—ab; [Foltz] 1411—ab
Intellectual workers and physical exercise, 516—E; [Oberteuffer] 1409—C
light, for patient with occasional tubercle bacilli in sputum, 986
optimum hours, and productivity, [Townsend] 853—ab
WORKERS: See Industrial Health, workers
WORKMEN'S COMPENSATION: See also Industrial Accidents; Medicolegal Abstracts at end of letter M
allergy, [Clarke] 855—ab
A. M. A. Bureau of Legal Medicine contact with, [Holloway] 855—ab
A. M. A. Council Committee, [Hussey] 854—ab; 1229—OS; 1373—OS
chiropractors and U. S. Employees' Compensation Act, 1381—OS
fee schedule (x-ray and laboratory), W. Va. 272
for workers, firemen, etc., in catastrophe [Mould] 860—ab
legislation, framing, (round table discussion) 859—ab
legislation: state of things to come, [Sayer] 858—ab
pneumonoconiosis, England, 1105
rehabilitation and, [Biram] 863—ab; [Solomon] 865—ab; [Foster] 867—ab
women claim, England, 613
WORLD WAR I (1914-1918), neuroses and psychoses in, [Trippe] 80—ab
number of blinded in, 1222—E
nurse shortage, how solved, [McCook] 538—C
venereal disease rate of troops, [Greenwald] ★9
wounds, Orr's plaster technic, 1143—ab
WORLD WAR II (1939—): See also Medicine and the War
Africa (French North), Lend-Lease aid to, 686
Africa (North), Army aids natives with tea, sugar, and cotton cloth, 265
American Red Cross, (campaign for funds) 764—E; (report) 961
American-Russian Committee for Medical Aid to U. S. S. R., Inc., 686
American war blinded at St. Dunstan's, England, 613; 1172
Australia provides Yanks with hospital, 1355
blast effect from externally applied pressure wave, [Williams] 376—ab
blast injuries, depth charges and pathologic changes from water blast, [McIntire] 120: ★1137; [Cameron] 121: 376—ab
blast injuries, hydraulic abdominal concussion, [Auster & Willard] ★895
blast injuries, immersion, 679—E; 1220—E
blast injuries of skin and light bombs, 117—ab
blast injuries, subdural hematoma and effusion, [Abbott & others] ★664; ★739
blinded, plans for, 1222—E
Britain, Girl Guides, 92
Britain thanks U. S. doctors for their aid, 57
Britain turns over 5 hospitals to U. S. forces, 437
British air force, head injuries in, [Symonds] 1311—ab

WORLD WAR II—Continued
British Army, myalgia in, [Good] 1416—ab
British Army, tetanus prophylaxis in, vs. U. S. Army method, 1299
British Expeditionary Force in France, dermatology in, 207
British Navy, dyspepsia in, [Wade] 792—ab
British Navy personnel, [Heggie] 893—ab
Casualties: See also subhead: Heroes; Wounded
casualties (civilian) in 11 months of air raids, England, 274
casualties, death of Germans on march over mountains, 768
casualties, hospitals designated for special surgical treatment, 1095
casualties, rest home for torpedoed seamen, 1358
children welfare, Palestine, 614
China drug factory, 62
dermatology, [Carslaw] 83—ab; 207
drugs, names, England, 206
foreign body finder: the locator, [Moorhead] ★123; (funds given Navy to buy) 1359
Germany, death of soldiers on march over mountains, 768
Germany, infectious diseases, 200
Germany, public health under Hitler, 266; 352; 524; 602; 686; 768; 847; 953; 1164; 1227; 1292; 1360
health conditions and air raids, England, 63
heroes: Allen, (Edgar) 530; 1227
heroes: Angell (H. H.) Order of Purple Heart to, 1096
heroes: Bates (J. H.) missing, 1358
heroes: Brown, W. E., missing in action, 532
heroes: Day (L. E.) memorial service, 362
heroes: Dibble (J.) and Gleason, (J. J.) reported missing, 1355
heroes: Edwards (W. F.) Silver Star to, 608
heroes: Flickinger (D. D.) Distinguished Flying Cross to, 766
heroes: Gamso (R. R.) Silver Star to, 766
heroes: Gillespie (J. O.) Distinguished Service Medal; now prisoner of war, 683
heroes: Granville (Charles) physician parachutist awarded Military Cross, 768
heroes: Havlik (A. J.) awarded Silver Star, 683
heroes: Hogan (B. W.) and McAteer (G. H.) awarded Purple Heart: McLarney, (E. P.) awarded Navy Cross, 1358
heroes: Hymes (A. L.) missing in action, 1234
heroes: Kenner (A. W.) mentioned on A. M. A. radio program, 199
heroes: Leininger (A. T.) Order of Purple Heart to, 1096
heroes: McCloskey (J. A.) first regular officer killed in the war, 437
heroes, MacCracken (W. B.) Navy Cross to, 684
heroes: Mattox (D. M.) Navy Cross to, 362
heroes: medical officers (7) and enlisted man decorated, 532
heroes: Michelson (A. S.) missing in action, 1235
heroes: memorial window to flight surgeons Randolph Field, Texas, 846
heroes: Mobile Hospital Unit cited, 685
heroes: Moir (W. W. Jr.) awarded Distinguished Service Cross, 271
heroes: nurses, Ruth M. Straub awarded Legion of Merit, 686
heroes: Peterson (J. H.) Silver Star Medal to, 266
heroes: Rogers (Henry S.), Purple Heart Cross to, 270; 1096
heroes: sailors leave their sick beds to fight, 64
heroes: Schmidt, (J. R.) 610
heroes: Stark (J. H.), Distinguished Flying Cross to, 446
heroes: Straub (Ruth M.) awarded Legion of Merit, 686
heroes: Sutter (L. M.) cited for bravery, 766
heroes: Wolfe (R. S.) awarded Soldier's Medal, 1356
hospital (emergency service) treatment of injuries, England, 613
hospitalization of wounded from overseas, 846
immersion foot, [Webster] 77—ab
"immersion foot and hand" [Ungley] 218—ab
infective hepatitis in, 879
influenza epidemic in military camps in Victoria, [Burnet] 708—ab
Injuries: See subheads: Blast injuries; Casualties; Wounds
medical supplies, appeal for, 1227
Medical Supplies for Russia: See subhead: Russia
military information, guarding, 1359
Netherlands merchant marine polyclinic, 1404
nutrition, anemia in, on wartime diets, England, [Davidson] 376; [Wills] 1181—ab
WORLD WAR II—Continued
nutrition, cod liver oil and fruit juices for young children and expectant mothers, 275
nutrition, communal feeding, Royal Ordnance Factory, [Gunson] 1248—ab
nutrition, food rationing card each for infants and children, Swiss, 1237
nutrition, starving children in France and Greece, 1104
nutrition, tuberculosis increase in Belgium, 534
nutrition, vitamin C nutrition in Royal Navy, [McNee] 546—ab
Pacific area (southwest) medical inspection, 56
peptic ulcer increased incidence, [Boles] ★640
Physicians: See also subhead: Heroes
physicians, deaths of, 196—E
physicians, Medical Specialists Unit no. 110 experiences in New Zealand, 1291
physicians, qualifications in the forward area, [Lull] ★639
physicians, Royal College of Surgeons meeting place for American and Canadian medical officers, 143
Polish military and refugee physicians meet in Tel-Aviv, 1105
postwar graduate education (Council report) 1397—OS
postwar planning for housing, and Royal College of Physicians, 962
postwar planning for medical care, 130—E; 136; 142; 1094—E; 1228—OS
postwar planning for science, England, 612
prisoners (enemy), scientific journals for S. P. P., 534
prisoners of war, artificial limbs for British in German camps, 1172
Russia, Anglo-Soviet Medical Council provides translations, 275
Russia, experimental medicine in, [Lavrentiev] ★436
Russia expresses gratitude for aid, 438
Russia in dire need of medical supplies and instruments, 1359
Russia, medical aid to (from England) 63; (from South Africa) 275; 695
Russia, medical x-ray units for, 1355
Russia, report on experimental medicine in, 436; 521
Russia; scientific work in Leningrad, [Kercheev] ★766
Russian medical students, books for, 200
Society of Friends, work of, 534; 1104
soldiers, age for calling up recruits lowered to 17 years and 8 months, England, 613
soldiers, blinded cared at St. Dunstan's, 613; 1172
soldiers, fatigue fracture of tibia, [Hartley] 376—ab
soldiers, neuralgic chest pain in Canadians, [Heaton] 460—ab
soldiers, recruiting for army from medical staffs of hospitals, 142
soldiers, trombidiosis in, from picking beans, [Schuppli] 219—ab
Souttar (H. S.) chairman to report on medical services for India, 533
surgery (abdominal) of "total war," [Gordon-Taylor] 981—ab
tetanus in the Middle East, effects of active immunization, 1157—E; [Boyd] 1181—ab
tuberculosis case finding in British air force, 143
tuberculosis increase in, 206; 534; 962
U. S. Army, accomplishments since Pearl Harbor; 762—E
venereal disease opposition defeated, England, 207, 274; 778; 1406
venereal disease, recrudescence of cases, Germany, 1360
Veterans: See Veterans
vital statistics improve, England, 63; 1104
women claim for compensation, England, 613
women war workers, care of children of, England, 64
women war workers, safety hat for, England, 534
Wounded: See also subhead: Casualties
wounded, British method of blanketing, 1226
wounded, choice of anesthesia for, [Beecher] ★899
wounded, warning as to morphine dose, England, 778
wounds (gunshot), fractures from treatment, [Gusynin] ★952
wounds, national collection at Royal College of Surgeons, 695
wounds of modern warfare, [MacFarlane] 76—ab
wounds, pensions for, England, 275
wounds, sulfathiazole, sulfanilamide, cod liver oil, etc., for, [Hawking] 466—ab
wounds, sulfonamides for, rules governing their use, [Long] ★363
WORLD WAR II—Continued
wounds tantalum as metallic implant to repair cranial defects, [Fulcher] ★931
wounds, thorax, [Forsee] 1414—ab
wounds, vitamin C and repair of injured tissue, [Bourne] 892—ab
WORMS: See Lungworm
WOUNDED, Transport of: See Ambulances
WOUNDS: See also Accidents; Trauma; under specific organs and regions
anesthesia for seriously wounded, [Beecher] ★899
gunshot (craniocerebral), papilledema in, [Murzin] 710—ab
gunshot, foreign body finder: the locator, [Moorhead] ★123
gunshot, fractures caused by treatment, [Gusynin] ★952
gunshot, of peripheral nerves, histamine for pain, [Rusetskiy] 710—ab
healing, use of porphyrins, 1237
infected (chronic), propamidine in, 946—E
infected, involving bone, sulfapyridine and sulfathiazole for, [Heggie] 892—ab
infected, prevention; treatment, [Smith] 851—ab
infected, sulfonamide compounds for, [Long] ★393
infected, with Clostridium: sulfanilamide, sulfadiazine, sulfathiazole, gramicidin and zinc peroxide effect on, [Sandusky] 459—ab
Perforating: See Abdomen
stab, of spinal cord with pigmentation, [Jones] ★1004
Surgical: See also under name of operation as Mastoidectomy
surgical, amino acids in, [Altshuler & others] ★163
surgical, closed with cotton or catgut sutures vs. infection, [Cannaday] 307—ab
surgical, sulfonamide film ("new skin") as dressing, [Pickrell] 373—ab
Suture of: See Suture
treatment, chlorophyll ointment, [Boehringer] 793—ab
treatment, cod liver oil, (Council report) ★759
treatment, glass dressings, [Glordano] 710—ab
treatment, Orr's plaster technic, 1143—ab
treatment, proflavine powder, [Mitchell] 156—ab
treatment, Russian All Union Institute discusses, 436; 521
treatment, scientific work in Leningrad, [Kercheev] ★766
treatment, sulfanilamide, local absorption, [Hodgson] 84—ab
treatment, sulfonamide, local use of sodium salts of, [Fox] 216—ab
War: See World War II

X

XANTHOCHROMIA, cutaneous, caused by hypercarotenemia, [Yepes Cadavid] 708—ab
XANTHOMATOSIS: See Niemann-Pick Disease
XERODERMA: See Ichthyosis
X-RAYS: See Roentgen Rays

Y

YAKIMA Valley Encephalitis: See Encephalitis, Epidemic
YALE Poliomyelitis Study Unit, 1296
YEAST, effect on manual labor, [Johnson] 789—ab
treatment of hypochromic anemia, [Moore & others] ★245
YELLOW FEVER, [Ortiz Mariotte] 1114—ab
National Service of Brazil, report, 963
vaccination with 17D virus, duration of immunity after, 681—E
YOHIMBINE, pharmacologic effects, 1315
YOUNG'S (Dr.) Piloment, 618—BI
YOUTH: See Adolescence

Z

ZEPHIRAN, bactericidal and bacteriostatic action, [Hoyt] 465—ab
ZINC Insulin: See Insulin
oxide, black dermographism produced with, [Urbach & Pillsbury] ★485
peroxide cream for microaerophilic hemolytic streptococcus ulcers, [Costello] ★36
peroxide, effect on gas gangrene, [Sandusky] 459—ab
peroxide in Clostridium welchi infection, [McIntosh] 1181—ab
ZONDEK, BERNHARD, p-chloro-xylenol solution intramuscularly, 779
ZOO Animals: See Animals
ZOOLOGICAL SOCIETY, New York, proposed research center in park by, 877

AUTHOR INDEX

In this Index are the names of the authors of articles which have appeared in THE JOURNAL, the names of those who have read papers before Societies as published in THE JOURNAL and those whose articles have been abstracted in the Current Medical Literature Department. The * preceding the page reference indicates that the article appeared in full in THE JOURNAL.

For subject index see page 1423.

A

Abarbanel, A. R., *1123
Abbott, W. D., *664, *739
Abels, J. C., *1261
Abente Haedo, F., 1417
Aceves, S., 295
Ackerman, W. G., 76
Adair, F. E., *553
Adams, J. M., 1244
Adler, H. F., *646
Agee, O. F., 1179
Ahumada, J. C., 85
Albright, F., 152; (correction), 548; 786
Albus, G., 88
Alessandri, H., 220
Alexander, R. C., *250
Allen, T. D., 76
Allen, W. M., 787
Almela Guillén, J., 982
Alonzo Y. A., 548
Altman, I., *566
Altshuler, S. S., *163
Alyea, E. P., 979
Anastassoff, D., 793
Anderson, W. A. D., 544
Andrus, W. D., 978
Angrist, A., 888
Annes Dias, 547
Anslinger, H. J., 212
Aranow, H., *1123
Archer, V. W., 978
Armour, J. C., 459
Armstrong, C., 980
Armstrong, W. D., 76
Arnold, F. A., Jr., 292
Asburn, L. L., 153
Astrachan, G. D., *746
Atkinson, A., 1309
Atkinson, A. J., *646
Aubert, E. F., 1241
Auerbach, O., 464
Auster, L. S., *995

B

Bach, E., 220
Badoux, V., 1312
Baer, S., *933
Bailey, C. P., *255
Baker, A. B., 461
Baltz, J. J., *723
Barach, A. L., 287
Barborka, C. J., 1411
Barcham, L., 1247
Barenberg, L. H., 212
Barer, A. P., 1309
Barker, J. M., 291
Barnes, A. R., 462, *1347
Barrows, D. N., 1414
Bartels, E. C., 286
Bartle, H., *1002
Battaglia, A., 793
Bauman, L., *1283
Bayles, T. B., 1309
Bazterrica, F., 793
Bean, W. B., 1412
Bearse, C., 1304
Beattie, J., 218, 377
Bechtel, M. J., *256
Beecher, H. K., 372, *899
Beeman, J. A., *826
Beerman, H., 77
Beeson, P. B., *1332
Bell, G. H., 546
Benedict, W. L., 288
Benson, C. D., 1180
Benson, G., *28
Berger, J., 372
Berk, J. E., 215
Bernstein, M., 77
Bernstein, S. S., 290
Beveridge, W. I. B., 708
Biebl, M., 158
Bigelow, W. G., 460
Bing, F. C., *813
Binger, M. W., *1321
Bingham, K., 1181
Biram, J. H., 863
Birnberg, V. J., 1310
Bisgard, J. D., 891, 1243
Biskind, G. R., *1317
Blackwood, W., 218
Blake, F. G., 980
Bloch, E., 466
Bloch, F. J., 74
Block, W. D., 979
Bloomfield, A. L., *315
Bloomfield, R., 371
Blum, B. B., *125
Bockus, H. L., *729, 1177
Bodenheimer, M., 1247
Bodian, D., *662
Boehringer, F., 793
Boles, R. S., *640
Bollman, J. L., 1413
Bonebrake, H. E., 890
Bonsib, R. S., 850
Boorman, K. E., 625
Bordley, J. E., 978
Borjas, A., 547
Borts, I. H., *319
Bortz, E. L., *107
Bourne, G. H., 892
Bowdoin, C. D., 889
Bowman, M., 460
Bowman, R. O., 154
Boycott, M., 546
Boyd, J. S. K., 1181
Boyd, W. W., 791
Braasch, W. F., 79, 623
Bradley, S. E., *27
Braley, A. E., *999
Bransfield, J. W., 284
Bratton, A. C., 543
Breñas, P., 86
Brewer, L. A., III, *1130
Bridges, W. G., 625
Brill, N. Q., *1150
Bristol, L. D., *816
Brodsky, S., 548
Broucha, L., 371
Brouha, L., 789
Brown, A. E., 462
Brown, E. V., 288
Brown, H., *307
Browne, H. C., 289
Bruno, F. E., 463
Brush, B. A., *1337
Buchanan, O. H., 979
Buckholtz, M., 786
Bueding, E., 286
Bule, L. A., *1144
Bull, D. E., 708
Burbank, B., 1414
Burch, G. E., 888
Burde, G., 465
Burdick, E. D., 977
Burford, T. H., 1414
Burnell, M., *799
Burnet, F. M., 708
Burstein, C. L., *187, 1241
Buttle, G. A. H., 156
Byfield, G. V., *118
Bywaters, E. G. L., 82

C

Cabezas V., J., 982
Callahan, G. B., 541
Cameron, G. R., 376
Cameron, J. D. S., 1248
Caminita, B. J., 787
Campbell, A., 461
Campbell, J. M., *991
Campbell, M., 545
Canipelli, E., 374
Cannon, E. M., *1137
Carlson, A. J., *806
del Carril, M. J., 468
Carslaw, R. W., 83
Carter, E., 154
Cassidy, M. L., *925
Casten, D., 1247
Castex, M. R., 709
Castiglioni, A., *582
Castleden, L. I. M., 293
Castleman, B., *1256
Caviness, V. S., 787
Chamberlin, G. W., 977
Chapman, T. S., 1311
Chávez, I., *1276
Chenoweth, B. M. Jr., 374
Chester, E. M., 891
Child, C. G., III, 372
Christiansen, V. T., 982
Chukanova, Z. I., 1114
Chute, R., 463, 980
Ciocco, A., *506
Clark, E., 708
Clark, G. E., Jr., 621
Clark, J. H., 705
Clarke, B. G., *499; (correction), 694
Clarke, J. A., Jr., 855
Clausen, N. M., 543
Claveaux, E. M., 85
Cleland, J. B., 466
Clock, R. O., 284
Coates, C. W., 375, 1109
Cohen, M. H., *408
Cohen, P., *656
Cohn, A. E., *1, 70, *113
Collard, H. B., 377
Collins, C. G., 1179
Collins, V. P., 287
Coloviras, G. J., 459
Colston, J. A. C., 217
Connell, F. G., 454
Conrad, A. B., *237
Conrad, A. H., Jr., *237
Consolazio, F., 371
Constans, G. M., 153
Cooke, J. V., 1201
Cooke, W. T., 545
Cooper, L. F., 80
Cooper, W. K., 74
Cornell, V., *746
Correa, 548
Costello, M. J., *36
Cote, G. L., 1112
Coulter, J. S., 866
Cowen, D., 287, 1178
Cowgill, G. R., *817
Craig, R. L., 288
Craver, L. F., 458, 706
Creevy, C. D., 788
Crlep, L. H., *121
Crowe, S., 978
Crumble, J. R., 466
Curtis, G. M., *123, 1175
Custer, E. A., *313
Cutler, E. C., *181

D

Dacie, J. V., 545
Dack, S., *1251
Daft, F. S., 153
Daily, E. F., *1006
Daley, R. M., *383
Dalton, J. N., *633
Dalton, J. W., 623
Dameshek, W., 215
Dandy, W. E., 290
Daniel, R. A., Jr., 154
Danis, P. G., 544
Darling, R. C., 371, 789
Davidson, L. S. P., 376
Davis, I. F., 787
Davison, C., 290
De Bakey, L., 788
De Courcy, J. L., 465
Delaney, J. H., 371
Denton, W., *827
de Takats, G., 81, 82, 1246
de Waal, H., 1113
Diamond, L. K., 463
Diaz Bobillo, I., 1312
Diaz-Rubio, M., 86, 296
Diehl, H. S., *635
Dillon, J. G., 457
Ditkowsky, S. P., *991
Doan, C. A., 1411
Dobbs, R. H., 1181
Dodd, B. E., 625
Dolley, F. S., *1130
Dolowitz, D. A., 978
Domm, A. H., *230
Donaldson, G. M. M., 376
Donoso, S., 548, 548
Dormer, B. A., 293
Dorrance, G. M., 284
Douglas, R. G., 787
Dowling, H. F., 155, *1190
Doyle, M. E., *908
Drinker, P., *822
Driver, J. R., *413
Dubach, R., 1245
Due, F. O., *664, *739
Duék, H., 378
Duggan, L. B., 1414
Duncan, J. T., 1181
Durie, E. B., 1113
Dwan, F., 621
Dyar, M. J., 376
Dynes, J. B., 981

E

Eaton, L. M., 1307
Ebbs, J. H., *339
Ecker, A., *401
Eden, K. C., 84
Edmondson, H. A., 888
Edson, J., *925
Edwards, W. B., *225
Egaña, E., 371, 789
Eggleton, M. G., 83
Eisenstadt, W. S., 152
Elek, S. R., 888
Elkins, C. W., 464
Elliott, E. C., *631
Ellis, P. M., 890
Ellman, P., 545
Elman, R., *498
Emmons, H. M., 1304
Engel, F. L., 786
Engel, G. L., 786
Engelhardt, H. T., 463
Enquin, B., 295
Erskine, D., 625
Espasandin, J., 1417
Espejo, L. D., 1182
Evans, E. E., *501
Evans, E. I., 372
Evans, J. A., 623
Evans, P., 156
Evans, V. L., 1307
Everett, H. S., 787

F

Farrell, M. J., *1159
Faust, E. C., 788
Fay, T., 1109
Feldman, H. A., 155
Ferguson, C., 786
Fernández W., S., 220
Ferrari, R. C., 1182
Fertman, M. B., *123
Fetterman, J. L., 286
Finkelstein, M. B., 1244, *1325
Finland, M., 622
Finley, K. H., 981
Fisher, J. C. V., 1304
Fisk, R. T., 465, 541
Fitzpatrick, L. J., 1414
Flake, C. G., 1112
Flexner, M., 1310
Flippin, H. F., *230, 705
Foa, T. R., 708
Foley, G., 468
Folsom, A. I., *573
Foltz, E. E., 1411
Foord, A. G., 541
Forbes, W. H., 789
Forchheimer, L. L., *250
Forsee, J. H., 1414
Forsythe, J. R., 621
Foster, T. C., 867
Foulger, J. H., 849
Fowler, W. M., 1309
Fox, C. L., Jr., 216, *1147
Frame, T. W., 1109
Fraser, R., 786
Freeman, W., 459
Frelle, M., 548
Freudenberger, C. B., 784
Freyberg, R. H., 979
Fricker, R., 542
Friedell, M. T., *830
Friedlander, H. M., 151
Friedman, E. P., 288
Frye, W. W., *182
Fuenzalida, D., 548
Fulcher, O. H., *931
Futch, C. E., *580

G

Gage, H., *1283
Gail, I. A., 544
Garb, J., 703
García Barón, A., 295
García Palazuelos, P., 220
Garon, M. L., 1310
Gasche, P., 85
Gatch, W. D., *903
Geary, P., 622
Geiger, A. J., 155
Geiger, J. C., 70
Gell, P. G. H., 84
Gemmill, A. A., 218
Gens, J. P., 980
Gersten, S., 786
Getzoff, P. L., 79
Gewanter, A. P., 888
Gibbon, J. H., Jr., 78, 465
Gibbon, M. H., 78, 465
Gibson, M., 293
Gilbert, N. C., 1246
Giordano, F. P., 710
Globus, J. H., 290
Glynn, L. E., 1311
Godding, E. W. (correction), 205
Godfrey, E. W., 977
Gold, H., 215
Goldburgh, H. L., *933
Goldman, A. M., 371
Goldman, J. L., 978
Goldstein, D. H., 458
Goldwater, L. J., 458
Gomez Camejo, M., *490
Good, M., 1416
Goodfriend, M. J., *1123
Goodhart, R., *93, *823
Goodwin, R. A., Jr., 622
Goodyear, A. V. N., 155
Gordon-Taylor, G., 981
Gosse, A. H., 625
Gould, S. E., 1241, *1325
Gracián Casado, M., 296
Graessle, O. E., 979
Grande Covian, F., 789
Gray, J., 460
Graybiel, A., 371, 789
Gready, T. G., Jr., *229
Green, H. D., 285
Greenblatt, R. B., *17
Greene, C. H., *715
Greene, J. A., *173
Greene, R., 1113
Greenhill, J. P., 375
Greenwald, E., *9
Griffin, *307
Griggs, J. F., 292
Gross, H. T., 1175
Gross, P., 464
Grunstein, I., *1187
Gubner, R. S., *383
Gulliver, F. D., *250
Gunson, E. B., 1248
Gusynin, V., *952
Gutman, A. B., 79
Gutman, E. B., 79

H

Haagensen, C. D., 704
Habbe, J. E., 74
Hachmeister, W., 158
Hagen, J., 87
Halloran, R. D., *1159
Hamilton, J. E., 703
Hamilton-Paterson, J. L., 293
Hammes, E. M., 857
Hammon, W. M., *560
Hand, L. W., 1
Hanes, F. M., *1152
Hansen, A. E., 621, *987, 1310
Harkins, H. N., 1247
Harms, C. R., *305
Harries, C. R., 84
Harris, D. M., *319
Harris, I. D., 978
Harris, T. N., *403
Harrison, M. B., 286
Hartley, J. B., 376
Hartman, F. W., *1337
Hartmann, A. F., 890
Hartmann, W., 88
Harvey, W. K., *100
Hauser, C. U., *667
Hauser, E. D. W., *1217
Hawking, F., 466
Heath, C., 371
Heaton, T. G., 460
Hecht, H., 1307
Heckel, G. P., 787
Heggie, J. F., 892, 893
Heggie, R. M., 892, 893
Heller, C. G., 1176
Helpern, M., *307
Hemmeler, G., 377
Henderson, A. F., 979
Henderson, J. L., 218
Hendu, W., 890
Herman, H., 1310
Herrell, W. E., 462
Hertzog, A. J., *256
Herve, J., 85
Herxheimer, H., 792
Hesseltine, H. C., *229, 461, *799
Heyd, C. G., *736
Hill, I. R., *826
Hill, M. R., *742
Himsworth, H. P., 1311
Hines, E. A., Jr., 1307
Hinglais, H., 1417
Hinglais, M., 1417

Hingson, R. A., ★225
Hoagland, R. J. (correction), 365
Hodes, H. L., ★1334
Hodgson, A. R., 84
Hoffmann, R., 790
Hollinger, N., ★1194
Holman, W. L., 966
Holmblad, E. C., ★820
Hope, R. B., ★753
Horwitz, O., ★1342
Howard, M. E., 980
Howard, P. J., 285
Howard, T., ★925
Howell, T. H., 545
Hoxie, H. J., 888
Hoyt, A., 465
Hug, E., 708
Huggins, C., 147
Humphreys, G. H., 1180
Hunt, H. B., 891, 1243
Hunter, A. C., ★25
Hunter, L. B., 890
Hussey, R., 854
Hyndman, O. R., ★390

I

Ickes, H. J., ★1334
Inclan, A., ★490
Ingalls, G. S., 543
Insh, A. M., 219
Invaldi, A., 220
Irons, E. E., 288
Isaacs, R., 1306
Ittner, E., ★925
Ivy, A. C., ★646, 1411

J

Jackman, R. J., ★1144
Jackson, R. L., 283
Jacobs, A. H., 78
Jacox, H. W., 464
Jankelson, I. R., 1304
Janney, J. H., 789
Janota, M., 1180
Jarvis, J. R., 543
Jenkins, J. A., 215
Jennings, J. R., ★319
Jensen, O. J., Jr., ★1147
Jesser, J. H., 82
Jewett, H. J., 375, ★566
Jiménez-Díaz, C., 86, 86, 468
Johnson, C. G., 708
Johnson, H. E., 154
Johnson, R. E., 371, 789
Johnson, R. M., 1176
Johnson, T. A., ★729, 1177
Johnston, J. A., 285
Johnston, J. L., 77
Johnston, J. R., 464
Jokl, E., 454
Jonas, L., 1111
Jones, D. J., 84
Jones, F. G., ★1201
Jones, H. W., Jr., 217
Jones, J. R., 1179
Jones, W. A., ★1004
Jordan, C. F., ★319
Jordan, E. P., ★1001
Joslin, E. P., ★198
Joyce, F. T., 1415
Joynt, M. F., ★319
de Juan, P., 709
Julesz, M., 219
Juncadella Ferrer, E., 157

K

Käser, O., 793
Kaffman, M., 548
Kalisch, A. C., ★408
Kampmeier, R. H., ★182
Kanaar, A. C., 1113
Kanof, A., ★11
Kaplan, I. I., ★1199
Kaplan, L. G., 371
Kapnick, I., 790
Karlstrom, A. E., ★256
Kartagener, M., 893
Kasanin, J., ★1317
Katz, L. N., 371, ★1347
Kaufman, W. H., ★168
Keefer, C. S., ★802
Keele, D. Y., 892
Keele, K. D., 892
Keeton, R. W., ★118
Kehoe, R. A., ★501
Keller, A. E., ★182
Kendall, A. W., 892
Kendall, B. S., 890
Kendall, E. C., 1412
Kenefick, J., 283
Kenney, J. M., 706
Kenyon, A. T., 542
Keohen, G. F., ★173
Kercheev, K., ★766
Kernohan, J. W., 462
Kerr, H. D., 74, 153
Keyes, J. W., 371
Kickham, C. J. E., 1304
Killian, S. T., 371
Kirby, W. M. M., 705
Kirillov, B. P., 710
Kirsch, H. W., 542
Kiyashev, A. P., 1114
Klinefelter, H. F., Jr., 152; (correction), 548
Knapp, M. E., 373
Knisely, M. H., 885
Knotts, F. L., 374
Knowlton, K., 542
Knox, R., 84
Kober, L. R., ★1215
Koch, F., 87
Koch, F. L. P., 1178
Kohan Y., R., 626
Kolb, A. M., 374
Kolb, W., 458
Koppa, T. M., ★1325
Koppelman, H., 372
Koppisch, E., ★956
Kramer, B., ★11
Kraul, C. W., 78
Krause, G. R., 891
Kretschmer, H. L., ★473
Kreutzer, R., 1312
Kruse, H. D., ★584, ★669
Kühn, J., 87
Kull, J., 467

L

Labate, J. S., 1414
Lahoz, C., 86, 157
Lamberti, C. E., 295
Langendorf, R., 371
LaPlace, L. B., ★1342
Lara Roldán, L., 86
Larcula, A., 468
Larkin, J. C., Jr., 706
Larson, C. L., 980
Laszt, L., 626
Lauener, P., 626
Lavarello, A., 709
Lavrentiev, ★436
Lawrence, C. H., 152
Lawrence, J. H., 706
Lawrence, R. D., 792
Lazarus, S., 546
Leake, J. P., 852
Leber, I., ★11
Leblond, C. P., 791
Lee, W. E., 81, 1247
Leeder, F. S., ★1325
Legge, J. W., 1113
Lehman, E., 1310
Lehnhoff, H. J., Jr., ★1321
Leitner, S. J., 378
de Lejarza, C., 793
Lenggenhager, K., 294
Leon, P., ★490
Lepper, M. H., ★1190
Lerner M., J., 220
Letendre, P., 81
Levine, S. A., 789, ★1347
Levinson, S. O., 1180
Levy, G. J., 154
Lewe, I. A., ★422
Le Winn, E. B., 77, 374
Lewis, J. M., 212
Lewis, P. M., 154
Lewis, T., 1311
Ley, A., 709
Lichtenstein, B. W., 287
Lidbeck, W. L., ★826
Lilga, H. V., ★125
Limarzi, L. R., 1245
Lindsay, S. T., 376
Lingg, C., ★1, ★113
Lintz, W., ★505
Lipschütz, A. (correction), 694
Lischer, C. E., ★498
Litchfield, J. T., Jr., 543
Litow, S., 76
Litzenberg, J. C., ★799
Livingood, C. S., ★406
Llosa Ricketts, G., 793
Löffler, W., 377, 467
Lolácono, G. J., 709
Long, P. H., ★303
Longley, B. J., 543
López Areal, F., 378
López Ruiz, F., 86
Losada L., M., 220
Lotwin, G., 542
Love, F. M., 890
Loveless, J. A., ★827
Low-Beer, B. V. A., 706
Lowenstein, O., 288
Lowsley, O. S., ★1137
Łożbnski, E., 538
Luce, D. S., 1304
Lull, G. F., ★638
Lund, W., 849
Luongo, E. P., ★100
Lyon, E., 294
Lyons, C., 790

M

Mabon, R. F., ★330
McBride, E. D., ★652
MacBryde, C. M., 1243
McCance, R. A., 1113
McCarrell, J. D., 372
McCook, J. B., 538
McCormick, C. O., 700
McCoy, D. A., ★1330
McEachern, D., 83
MacFarlane, J. A., 76
MacFate, R. P., 78
McGee, L. C., 852
McGeorge, M., 215
McGovern, T., ★1270
McGregor, J. S., 466
Machle, W., ★501
McIntosh, J., 1181
MacKay, H. M. M., 1181
McKormick, E. K., 1175
Maclay, W. S., 156
Maclennan, J. D., 1181
MacMillan, J. M., ★723
McNaughtan, J., 1113
McNee, G. Z. L., 546
McSorley, J. G., 376
MacVicar, D. N., ★413
Maeder, E., 626
Mahaim, I., 294
Maletta, A. L., 890
Mann, F. C., ★720
Mann, W., 791
Manson, M. H., 862
Marlon, D. F., ★723
Marks, H. H., ★1251
Marks, M. M., ★1344
Marshall, E. K., Jr., 543
Martin, J. D., Jr., ★330
Martin, W. F., ★667
Martin, S., 705
Mason, H. L., ★943, 1111
Mason, L. W., 73
Master, A. M., ★1251
Mateer, J. G., ★723
Mathews, W. R., 544
Maunsell, K., 1311
Maynard, M. T. R., ★1194
Mayne, A., ★929
Mazzel, E. S., 709
Medlinger, F. G., 458
Meiklejohn, A. P., 371
Meister, E., 158
Meleney, F. L., 459
Mellanby, K., 708
Mencher, W. H., 786
Mengert, W. F., 284
Menninger, W. C., 1248
Meredith, R. H., 80
von Meyenburg, H., 626
Meyer, A., 792
Miescher, K., 85
Millar, W. G., 293
Miller, A. H., 783
Miller, D. S., 81
Miller, E. B., 215
Minnich, V., ★245
Minton, S., Jr., 154
Mitchell, C. L., 285
Mitchell, G. A. G., 156
Mitchell, N., 888
Modern, F., 295
Moeschlin, S., 157
Mollison, P. L., 625
Monroe, W. M., 155
Montañés del Olmo, E., 468
Montoro, O., 296
Moore, C. V., ★245, 1245
Moorhead, J. J., ★123
Mooser, H., 467
Morate, H. F., 893
Moritz, J. R., ★97
Morris, G. E., ★192
Morriss, W. H., 622
Morton, D. G., 283
Morton, D. J., 291
Moss, E. S., 151
Mould, W. L., 860
Mudge, G. H., ★1147
Mundet, E., 769
Munger, A. D., 1409
Muñoz Rivas, G., 378
Muñoz Turnbull, J., 296
Munro, D., 464
Munro, H. N., 546
Murphey, F., ★1209
Murzin, A. N., 710
Myers, G. B., 1176
Myers, J. A., ★921

N

Napier, W., 219
Nash, T. P., Jr., 885
Neal, P. A., 787
Necheles, H., 1180
Needles, W., ★914
Neely, O. A., 891
Neffson, A. H., 624
Nelson, E. W., 1179
Neuhof, H., 465
Neumann, H., 1416
Neumann, O., 296
Neuwahl, F. J., 157
Neuwelt, F., 542
Nevin, S., 792
Newton, F. C., 789
Nichols, J. B., 544
Nickel, W. F., 978
Nissen, R., 147
Nogués, A. E., 85
Northedge, A. L., 708
Norwood, W. D., ★501
Nosik, W. A., ★664, ★739
Noth, P. H., 1307
Notton, H. E. F. (correction), 205
Nuzum, F. R., 623

O

Oberteuffer, D., 1409
O'Brien, H. A., ★573
O'Callaghan, D., 981
O'Leary, P. A., 151
Oliva, E., 709
Oppel, T. W., 977
Oppenheimer, B. S., 290
Orgain, E. S., 215
Ormond, A. L., 790
Ortega I., A., ★1276
Ortiz Marlotte, C., 1114
Ortiz Ramos, P., 468
Oughterson, A. W., ★335

P

Page, I. H., ★754
Paige, B. H., 287, 1178
Papper, E. M., ★27, 286
Parcher, A. H., 217
Pardee, H. E. B., ★1347
Pardo-Castello, V., ★1264
Parodi, A. F., 708
Parra, D. M., 468
Parran, T., ★520
Parras Benito, J., 86
Pasternack, J. G., 151
Paul, H., 87
Paul, J. R., 71, 623
Paulley, J. W., 707
Paz, B., 1312
Pearlman, W. H., 289
Peardstine, B., ★933
Pedersen-Bjergaard, K., ★1117
Peelen, J. W., 1310
Peeples, W. J., 73
Pellicano, V. L., ★1150
Peluffo, E., 85
Penberthy, G. C., 1180
Pendergrass, E. P., 977
Percival, G. H., 156
Pérez Martínez, J., 468
Perrin, T. G., 295
Perry, I. H., 966
Pescador, L., 378
Peters, R., ★322
Petersen, W. F., ★929
Peterson, O. L., 622
Petro, J., 1416
Phaneuf, L. E., ★799
Picado T., C., 295
Pickrell, K. L., 373, 978
Pilcher, L. S., 704
Pillsbury, D. M., ★406, ★485
Pincus, G., 289
Pinto Pupo, P., 467
Pitman, L. K., ★752
Platou, R. V., 621
Plaut, J. A., ★335
Poch, J. A., 793
Poles, F. C., 546
Popjak, G., 82
Poppen, J. L., 286
Popper, H., 1413
Portillo, J. M., 85
Portis, S. A., ★569, ★733
Poston, M. A., 215
Poth, E. J., 374
Potts, W. J., 979
Power, M. H., 1111
Powers, W. L., 1414
Presnyakov, D. F., 710
Pruce, A. M., ★935
Pruitt, R. D., 462
Pudenz, R. H., ★478
Puhr, L., 467
Pund, E., 73
Puppel, I. D., 1175
Purriel, P., 1417

R

Rabin, S., 378
Radl, R. B., 153
Randall, A., 980
Randolph, H. S., ★1215
Rantz, L. A., ★315, 705
Rapaport, H. G., 1310
Rapaport, S., 547
Ravdin, I. S., ★322
ReBell, F. G., ★742
Recatero, L., 86, 157
Rehfuss, M. E., 215
Reid, J., 546
Reifenstein, E. C., Jr., 152; (correction), 548
Reimann, F., 1312
Reimann-Hunziker, G., 893
Reimann-Hunziker, R., 893
Reinhard, E. H., 1245
Renshaw, R. R., 621
Retan, G. M., 71
Rhoads, C. P., ★1261
Rhoads, J. E., 81, ★322
Richards, R. L., 286
Richardson, K. C., 83
Riegel, C., ★322
Rigdon, R. H., 82
Riley, J. G., ★338
Rinehen, F., 157
Rippy, E. L., 1415
Riseman, J. E. F., ★917
Risso, R., 1417
Ritchie, E. B., 458
Ritter, J. A., 1247
Roberts, G. J., 1310
Roberts, H. K., 1243
Roberts, O. J., ★267
Robertson, E. C., ★908
Robinson, H. J., 979
Robinson, J. R., 84
Robinson, W. D., 789
Roca, A., 709
Roca de Viñals, R., 709
Rocca, F., 85
Roccatagliata, R. L., 1182
Roda, E., 86
Rodriguez Devincenzi, A., 1417
Rof Carballo, J., 86
Rosenow, E. C., 705
Rosenthal, S. R., 288
Ross, T. F., 293
Ross, W. D., 83
Rotter, W., 87
Rovenstine, E. A., ★27, 286
Royster, C. L., 787, 790
Rudy, A., 790
Ruff, G., 295
Rusetskiy, I. I., 710
Ruskin, S. L., 288
Russell, W. R., 1311
Rutherford, R. N., 73, 891
Rybakov, L. M., 710
Rydberg, E., ★1117

S

Sagall, E. L., ★917
Sahyun, M., ★163
Salaber, J. A., 85
de Salamanca, E., 893
Salmon, U. J., 978
Salvert-Aguilo, F. J., 85
Samuels, S. S., 700
Sanders, M., ★250, ★999
Sandiford, I., 542
Sandstead, H. R., 624; (correction), 694
Sandusky, W. R., 459
Saphir, W., 1304
Saslaw, S., 1411
Satriano, D., ★163
Satterthwaite, M. W., 217
Sawyer, W. A., ★853
Sayer, H. D., 858
Scarborough, H., 546, 707
Schaefer, A., 158
Schales, O., 977
Schauffler, G. C., ★799
Schelling, V., ★1337
Schenken, J. R., 151
Schild, H. O., 83
Schindler, R., 81
Schlossmann, N. C., 465
Schmelkes, F. C., 978
Schmidt, H. J., ★190
Schneider, A. J., ★163
Schnelter, R., 787
Schnetz, A., 547
Schonfeld, W. A., ★177
Schuppli, R., 219
Schwab, J. L., 1411
Schwartz, L., ★230, 705
Scott, L. D., 217
Scott, P., 891
Scott, R. B., 787
Scoville, W. B., 216
Scaly, W. C., 704
Sebrell, W. H., 153
Sedlacek, E., 86
Seeger, S. J., 848
Seelig, M. G., 1304
Seibels, R. E., ★799
Seigneurin, R., 1182
Selble, F. R., 1181
Selby, C. D., 850
Sellner, A., 294
Semmes, R. E., ★1209
Sepúlveda B., ★1276
Severac, M., 77
Shandorf, J. F., 787
Shefts, L. M., 1414
Shepherd, R. G., 543

Short, R. H. D., 376
Shoulders, H. S., 217
Shryock, E. H., *742
Shumway, N. P., *1342
Siegel, J., 458
Sigler, L. H., 623
Sillman, J. H., 153
Simkins, S., 77
Singer, K., 215
Skinner, H. G., 1178
Skogland, J. E., 1179
Sloan, L. L., *566
Smith, A. D., 293
Smith, A. E., 851, *1003
Smith, C. R., 285
Smith, D. C., *168
Smith, J. W., 1304
Smith, L. M., 707
Smith, M. H. D., *1334
Smith, M. T., 890
Smith, P. H., 786
Smith, S., 979
Smith, T. E., *495
Smithwick, R. H., *1256
Smyth, C. J., 1244, *1325
Snow, K. S., 1304
Snyder, A. F., 375
Sojo, E., 468
Solarz, S. D., 888
Soley, M. H., 624
Solomon, A. P., 865
Somervell, T. H., 981
Sommer, H. E., 889, 890
Sommers, H. J., 153
Sperling, L., 76
Spicer, S. S., 153
Spies, T. D., *245
Starr, I., 1111
Stead, E. A., Jr., 977
Steele, J. M., 700
Steigmann, F., 542, 1413
Steindler, A., *390
Stern, L. S., 545
Stern, M., 286
Stevenson, E., *991
Stevenson, E. S., 703
Stewart, J. D., 790
Stewart, M. A., 283
Stickney, J. C., 76
Stiebeling, H. K., *831
Stiles, M. H., 374
Stiles, M. T., 374
Stirnimann, F., 1312
Stirnimann, W., 1312
Stokes, A. M., 285
Stokes, J., Jr., 889, 890
Stone, M. J., 703
Stone, R. S., 624, 706, 706
Stookey, P. F., 82
Stout, A. P., 704
Strassmann, G., 74
Strauss, H., *1187
Streit, P. H., 289
Strong, G. H., *566
Stroud, W. D., *1342
Sturnick, M. I., *917
Sullivan, T. J., 79
Suter, F., 1114
Sutliff, W. D., *307
Sutton, R. L., Jr., *1344
Sweet, L. K., 155, 457
Symonds, C. P., 1311
Szerdahelyi, V. L., 982

T

Tabanera, J. A., 295
Tabershaw, I. R., *192
Taft, C. P., 848
Tager, B. N., 542
Taplin, G. V., *313
Tarasenko, V. M., 1114
Tatlock, H., 980
Tatum, A. L., 543
Taylor, H. K., *1270
Taylor, R. D., *754
Telser, S. E., *118
Templin, J. L., 705
Terry, T. L., 1178
Thomas, C. C., 1111
Thomas, H. B., *408
Thomas, J. E., 215
Thorogood, E., *322
Throckmorton, T. D., 1180
Tiant, F. R., *1264
Tice, F., 622
Tisdall, F. F., *908
Tobin, W. R., *41
Toledo A., P., 548
Tomb, J. W., 1113
Tomskey, G. C., 79
Topkins, P., 1414
Torpin, R., 73, 147
dalla Torre, L., 626
Touroff, A. S. W., 78
Townsend, J. G., 853
Trask, J. D., 623
Trippe, C. M., 80
Trommer, P. R., 966
Trotter, W. R., 84
Trowell, H. C., 1416
Tucker, C. A., 1112
Tuohy, E. L., *42
Turnbull, F., 458
Turner, E. L., 217
Tuttle, W. W., 705
Twyman, J. B., 784

U

Uehlinger, E., 378
Umphlet, T. L., 787
Unger, L., *325
Ungerleider, H. E., *383
Ungley, C. C., 218
Upton, J. R., *38
Urbach, E., *485
Urrutia, D., 547

V

Vaccaro, H., 982
Vaisman, S., 547
Valdivieso, R., 548
Vance, B. M., 74
Van Liere, E. J., 76
Veal, J. R., *240
Vickery, G. W., 79
Vidal Freyre, A., 1417
Vietz, H. R., *499; (correction), 694
Vieta, J. O., 703
Vilter, R. W., *245
Violle, H., 1182
Vivanco, F., 468
von Sallmann, L., 284
Voss, H., 87
Voto-Bernales, J., 86, 1182

W

Waas, F. J., 374
Wade, H. J., 792
Wade, L. J., 1245
Wagener, H. P., 462
Wakefield, E. G., *830
Wakeley, C. P. G., 376
Wakim, K. G., *903
Walker, A. E., 458
Walker, J., 1181
Warren, J. V., 977
Warren, K. W., *1337
Waters, R. M., 783
Watkins, D. E., 1413
Watson, J., *925
Watts, J. W., 459
Waud, R. A., 1178
Waugh, R. L., *338
Webster, D. R., 77
Weed, L. A., 154
Weiner, A. L., *411
Weise, E. C., 75
Weisman, A. L., 375, 1109
Weiss, R. S., *237
Werthessen, N. T., 152
West, W. T., 459
Weston, R. E., 1180
Weymuller, C. A., *925
Whitby, J., 156
Whitcomb, B. B., 216
White, H. J., 543
White, P. D., 286, 545, *1347
Whittenberger, J., 371
Widdowson, E. M., 1113
Wilburne, M., 700
Wilder, R. M., *943, 1111
Willard, J. H., *995
Willetts, A. T., 463, 980
Williams, E. R. P., 376
Williams, H. L., 462
Williams, P. F., *799
Williams, R. D., *943, 1111, 1412
Williams, R. J., 457
Wills, L., 1181
Wilson, F. N., *1347
Wilson, H. E., 1411
Winkelman, N. W., 461
Winkler, H., 220
Winsor, T., 888
Winton, F. R., 83
Wise, R. A., *666
Wishard, F. B., *810
Wolf, A., 287, 1178
Wolf, A. A., *325
Wolf, S., 1177
Wolferth, C. C., *1349
Wolff, D., 890
Wolff, H. G., 1177
Wolff, W. A., 81
Wolkin, J., *390
Wolters, S. L., 461
Wood, P. M., 966
Wood, W. W., Jr., 79
Woodhull, R. B., 82
Woodson, F. G., *1343
Woolhouse, F. M., 77
Woolley, L. F., 543
Woolpert, O. C., 1411
Wright, J., 373

Y

Yanof, Z. A., 1308
Yater, W. M., 80, 291
Yepes Cadavid, J., 708
Yonkman, F. F., 1307
Young, L. E., *313
Ysander, F., 547

Z

Zemp, F. E., *828
Zitman, I. H., *569
Zollinger, R., *181
Zugerman, I., 374

INDEX TO PAGES

OF THE JOURNAL, ACCORDING TO WEEKLY ISSUES—VOLUME 121, JANUARY—APRIL, 1943

Pages	No.	Date
1— 92	1	Jan. 2
93—162	2	Jan. 9
163—224	3	Jan. 16
225—302	4	Jan. 23
303—382	5	Jan. 30
383—472	6	Feb. 6
473—552	7	Feb. 13
553—630	8	Feb. 20
631—714	9	Feb. 27
715— 798	10	March 6
799— 898	11	March 13
899— 986	12	March 20
987—1116	13	March 27
1117—1186	14	April 3
1187—1250	15	April 10
1251—1316	16	April 17
1317—1474	17	April 24

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